ASA Research

Excel Budgeting

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1. **Consolidating Budgets** – CPAs often have a need to consolidate data such as:

   - Months
   - Departments
   - Locations
   - Warehouses
   - Sale Representatives

   In this section we will explore four consolidation methods - two methods for consolidating data that is similar, and two more methods for consolidating data that is dissimilar. These four methods are as follows:

   1. Using simple formulas to consolidate similar data.
   2. Using spearing formulas to consolidate similar data.
   3. Using the "Data Consolidate Command" to consolidate dissimilar similar data.
   4. Using the "PivotTable Wizard" to consolidate dissimilar similar data.

1. Using Simple Formulas To Consolidate Similar Data - The workbook below contains identical budgets for Departments A, B, C and D. The goal is to consolidate these four budgets into one consolidated budget.

	A	B	C	D	E	F	G
1	**Department A - George**						
2							
3							
4			Q1	Q2	Q3	Q4	Total
5	1000	Rent	4,000	4,000	4,000	4,000	16,000
6	2000	Salaries	6,700	7,800	7,800	7,800	30,100
7	3000	Insurance	1,450	1,450	1,450	1,450	5,800
8	4000	Marketing	700	700	700	700	2,800
9	5000	Supplies	500	500	500	500	2,000
10	6000	Entertainment	1,200	-	2,000	-	3,200
11	7000	Contract Labor	3,500	3,500	-	-	7,000
12	8000	Travel	7,500	7,500	7,500	7,500	30,000
13	9000	Miscellaneous	1,750	1,750	1,750	1,750	7,000
14		Totals	27,300	27,200	25,700	23,700	103,900
15							
16							
17							

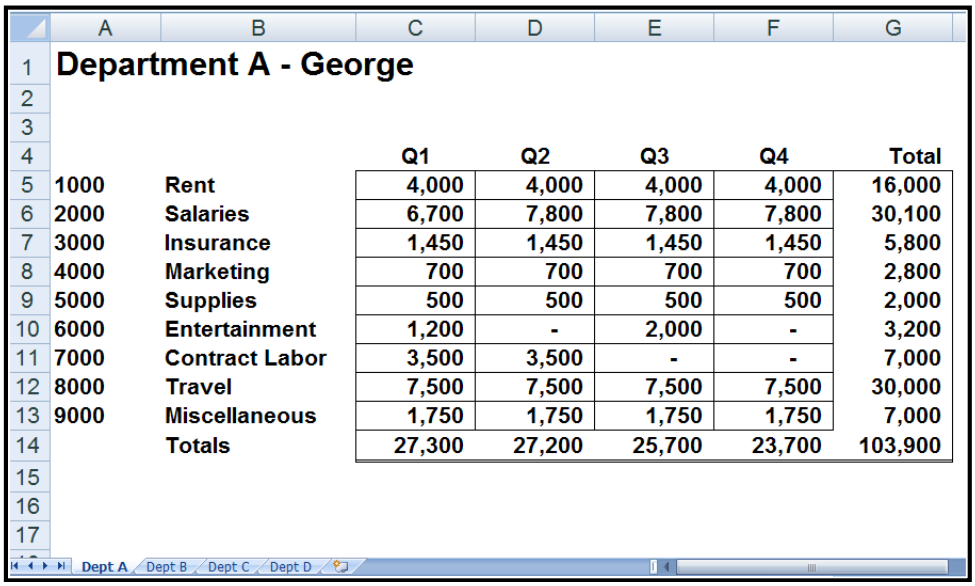
Dept A | Dept B | Dept C | Dept D

- **CTRL + Drag Tab –** Select worksheet labeled "Dept D". Use the CTRL + Drag Tab keystroke combination to create a duplicate worksheet of Dept D.
- **Clean –** Clean the new worksheet by deleting the data in the grid area.
- **Relabel –** Change the worksheet labels in Cells A1 and on the worksheet tab to read "consolidated".
- **Formula –** In cell C5, enter a formula adding the C5 cells in the four budget sheets. The formula should look like this:

='Dept A'!C5+'Dept B'!C5+'Dept C'!C5+'Dept D'!C5

- **Copy –** Copy the formula down and across the grid area, and you are done.

2. **Using Spearing Formulas To Consolidate Similar Data -** The workbook below contains identical budgets for Departments A, B, C and D. The goal is to consolidate these four budgets into one consolidated budget.



	A	B	C	D	E	F	G
1	**Department A - George**						
2							
3							
4			Q1	Q2	Q3	Q4	Total
5	1000	Rent	4,000	4,000	4,000	4,000	16,000
6	2000	Salaries	6,700	7,800	7,800	7,800	30,100
7	3000	Insurance	1,450	1,450	1,450	1,450	5,800
8	4000	Marketing	700	700	700	700	2,800
9	5000	Supplies	500	500	500	500	2,000
10	6000	Entertainment	1,200	-	2,000	-	3,200
11	7000	Contract Labor	3,500	3,500	-	-	7,000
12	8000	Travel	7,500	7,500	7,500	7,500	30,000
13	9000	Miscellaneous	1,750	1,750	1,750	1,750	7,000
14		Totals	27,300	27,200	25,700	23,700	103,900
15							
16							
17							

Dept A | Dept B | Dept C | Dept D

- **CTRL + Drag Tab –** Select worksheet labeled "Dept D". Use the CTRL + Drag Tab keystroke combination to create a duplicate worksheet of Dept D.

- **Clean –** Clean the new worksheet by deleting the data in the grid area.

- **Relabel –** Change the worksheet labels in Cells A1 and on the worksheet tab to read "consolidated".

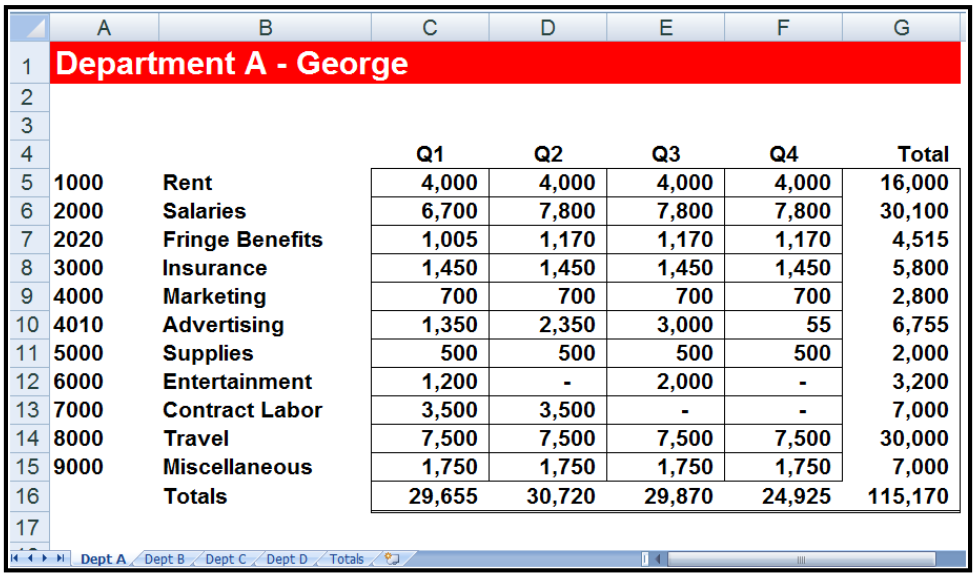
- **Formula –** In cell C5, enter a spearing formula that adds cell C5 cells in the four budget sheets. The formula should look like this:

=SUM('Dept A:Dept D'!C5)

I use the mouse to accomplish this step. Start by typing "=SUM(", then click on cell C5 in Dept A, hold the shift key down, and click cell C5 in Dept D.

- **Copy –** Copy the formula down and across the grid area, and you are done.

3. **Using the "Data Consolidate Command" To Consolidate Dissimilar Similar Data -** The workbook below contains dis-similar budgets for Departments A, B, C and D. In other words, each worksheet contains some different row descriptions and more or less rows than the other worksheets. The goal is to consolidate these four budgets.



Department A - George

		Q1	Q2	Q3	Q4	Total
1000	Rent	4,000	4,000	4,000	4,000	16,000
2000	Salaries	6,700	7,800	7,800	7,800	30,100
2020	Fringe Benefits	1,005	1,170	1,170	1,170	4,515
3000	Insurance	1,450	1,450	1,450	1,450	5,800
4000	Marketing	700	700	700	700	2,800
4010	Advertising	1,350	2,350	3,000	55	6,755
5000	Supplies	500	500	500	500	2,000
6000	Entertainment	1,200	-	2,000	-	3,200
7000	Contract Labor	3,500	3,500	-	-	7,000
8000	Travel	7,500	7,500	7,500	7,500	30,000
9000	Miscellaneous	1,750	1,750	1,750	1,750	7,000
	Totals	29,655	30,720	29,870	24,925	115,170

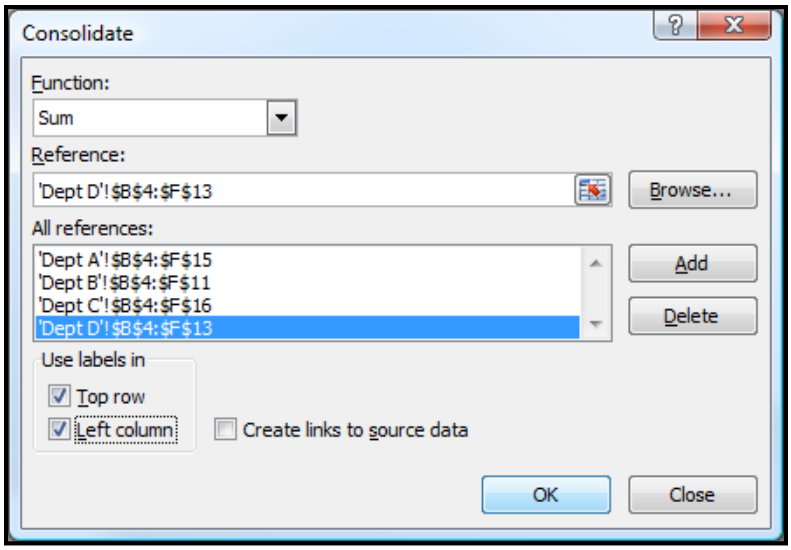
Dept A | Dept B | Dept C | Dept D | Totals

- **New Worksheet –** Insert a new worksheet.

- **Label –** Label the new worksheet in Cells A1 and on the worksheet tab to read "Consolidated".

- **Select Cell –** Select a blank cell such as B5.

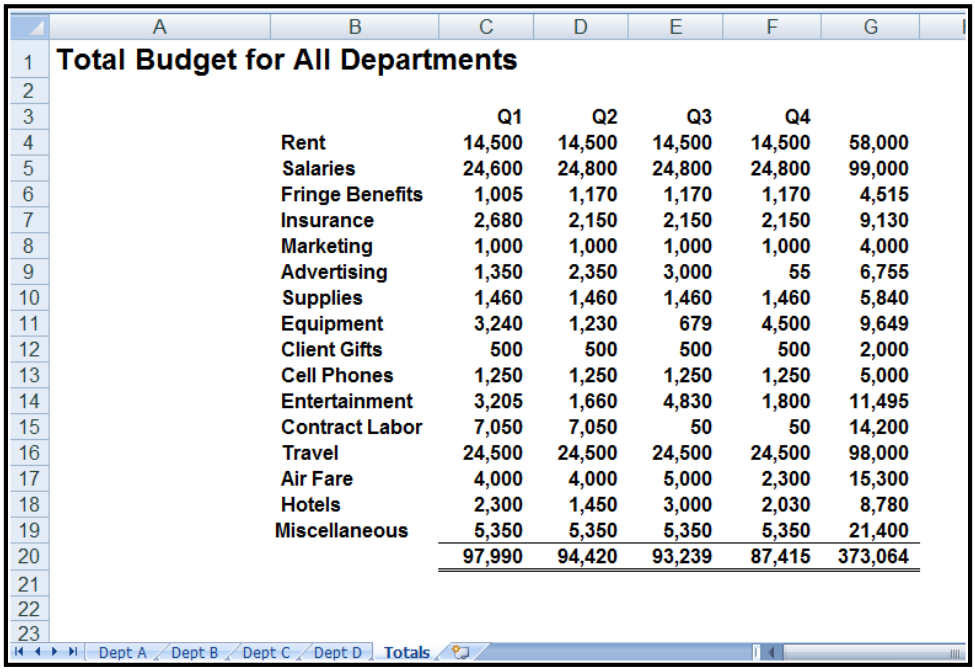
- **Data, Consolidate** – Select Data, Consolidate to display the Consolidate dialog box as shown below. Make sure to click the Cell Choose button, then highlight the data only on Dept A, click "Enter", and then click "Add". Repeat this process for Dept B, C and D.



Click the check boxes to use Labels in the "Top Row" and "Left Column".

- **Finish** – Click OK to produce the results

- **Add Totals** - Highlight your data and expand the selection to include a blank bottom row and blank right column. Click the AutoSum tool, add formatting and you are done.



Total Budget for All Departments

	Q1	Q2	Q3	Q4	
Rent	14,500	14,500	14,500	14,500	58,000
Salaries	24,600	24,800	24,800	24,800	99,000
Fringe Benefits	1,005	1,170	1,170	1,170	4,515
Insurance	2,680	2,150	2,150	2,150	9,130
Marketing	1,000	1,000	1,000	1,000	4,000
Advertising	1,350	2,350	3,000	55	6,755
Supplies	1,460	1,460	1,460	1,460	5,840
Equipment	3,240	1,230	679	4,500	9,649
Client Gifts	500	500	500	500	2,000
Cell Phones	1,250	1,250	1,250	1,250	5,000
Entertainment	3,205	1,660	4,830	1,800	11,495
Contract Labor	7,050	7,050	50	50	14,200
Travel	24,500	24,500	24,500	24,500	98,000
Air Fare	4,000	4,000	5,000	2,300	15,300
Hotels	2,300	1,450	3,000	2,030	8,780
Miscellaneous	5,350	5,350	5,350	5,350	21,400
	97,990	94,420	93,239	87,415	373,064

Comments:

- **Row Descriptions -** Note that the consolidation works only to the extent that the different worksheets contain the same row descriptions. Had you department heads

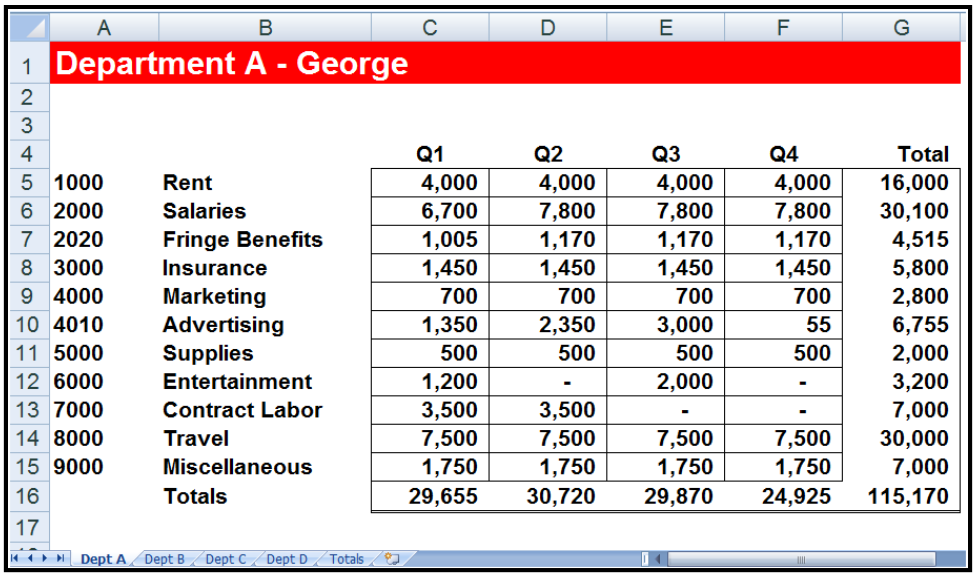
used the descriptions Rent, Rent EXP, and Rent Expense, then those rows would not actually consolidate but would be shown as three separate rows on the resulting consolidation report.

- **Account Numbers –** As an option, you might insert account numbers to the left of the row descriptions to consolidate dissimilar information which contains dis-similar row descriptions.

- **To Update –** To Update the results, place your cursor in the upper left hand corner of the Consolidation range, and rerun the Consolidate command. If the resulting report is a different size, you will need to add totals or clean up left behind data.

- **Consolidate Different Workbooks** – Excel can also consolidate data from different workbooks. The procedure is exactly the same except that you use the Browse button instead of the Cell Chooser button to point to your data ranges.

4. **Using The "PivotTable Wizard" To Consolidate Dissimilar Similar Data -** The workbook below contains dis-similar budgets for Departments A, B, C and D. In other words, each worksheet contains some different row descriptions and more or less rows than the other worksheets. The goal is to consolidate these four budgets.



	A	B	C	D	E	F	G
1	**Department A - George**						
2							
3							
4			Q1	Q2	Q3	Q4	Total
5	1000	Rent	4,000	4,000	4,000	4,000	16,000
6	2000	Salaries	6,700	7,800	7,800	7,800	30,100
7	2020	Fringe Benefits	1,005	1,170	1,170	1,170	4,515
8	3000	Insurance	1,450	1,450	1,450	1,450	5,800
9	4000	Marketing	700	700	700	700	2,800
10	4010	Advertising	1,350	2,350	3,000	55	6,755
11	5000	Supplies	500	500	500	500	2,000
12	6000	Entertainment	1,200	-	2,000	-	3,200
13	7000	Contract Labor	3,500	3,500	-	-	7,000
14	8000	Travel	7,500	7,500	7,500	7,500	30,000
15	9000	Miscellaneous	1,750	1,750	1,750	1,750	7,000
16		Totals	29,655	30,720	29,870	24,925	115,170
17							

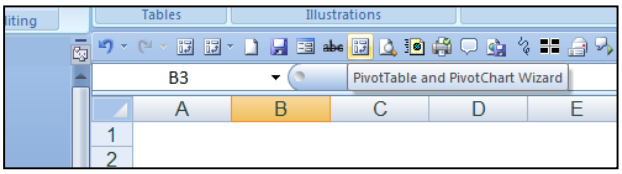
Dept A | Dept B | Dept C | Dept D | Totals

- **New Worksheet –** Insert a new worksheet.

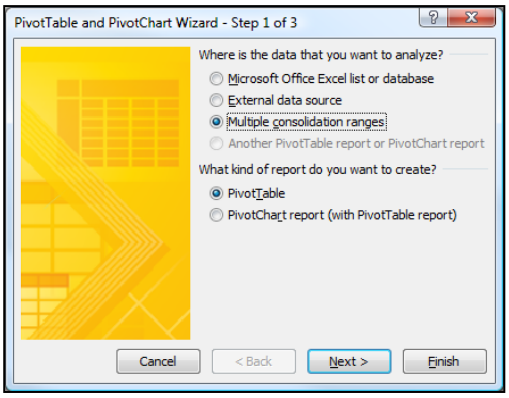
- **Label –** Label the new worksheet in Cells A1 and on the worksheet tab to read "Consolidated".

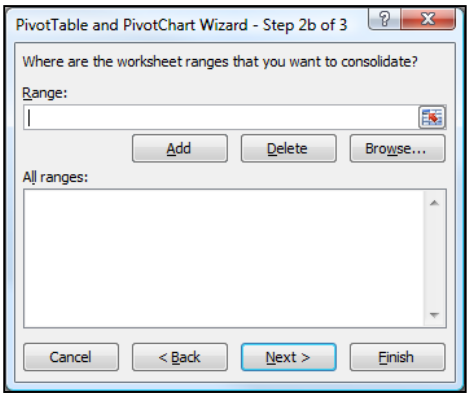
- **Select Cell –** Select a blank cell such as B5.

- **PivotTable Wizard** – In Excel 2007 and excel 2010, you must first customize your Quick Access Toolbar and insert the icon titled PivotTable and PivotChart Wizard as shown below. This is a hidden tool in Excel 2007 and cannot be used unless you first add it to your Quick Access Tool bar. (The Insert PivotTable command in Excel 2007 does not allow you to select multiple consolidation ranges).



- **PivotTable** – Click the PivotTable and PivotChart Wizard icon to display the PivotTable and PivotChart Wizard dialog box as shown below. Choose multiple Consolidation ranges and click Next, and Next again. The dialog box on the right should now be displayed.





Click the Cell Chooser button, then highlight the data only on Dept A, click “Enter”, and then click “Add”. Repeat this process for Dept B, C and D.

- **Finish** – Click “FINISH” to produce the results.

- **Add Formatting** - Highlight your data and add formatting, then you are done.

	A	B	C	D	E	F	G
1		Page1	(All)				
2							
3		Sum of Value	Column Labels				
4		Row Labels	Q1	Q2	Q3	Q4	Grand Total
5		Advertising	1,350	2,350	3,000	55	6,755
6		Air Fare	4,000	4,000	5,000	2,300	15,300
7		Cell Phones	1,250	1,250	1,250	1,250	5,000
8		Client Gifts	500	500	500	500	2,000
9		Contract Labor	7,050	7,050	50	50	14,200
10		Entertainment	3,205	1,660	4,830	1,800	11,495
11		Equipment	3,240	1,230	679	4,500	9,649
12		Fringe Benefits	1,005	1,170	1,170	1,170	4,515
13		Hotels	2,300	1,450	3,000	2,030	8,780
14		Insurance	2,680	2,150	2,150	2,150	9,130
15		Marketing	1,000	1,000	1,000	1,000	4,000
16		Miscellaneous	5,350	5,350	5,350	5,350	21,400
17		Rent	14,500	14,500	14,500	14,500	58,000
18		Salaries	24,600	24,800	24,800	24,800	99,000
19		Supplies	1,460	1,460	1,460	1,460	5,840
20		Travel	24,500	24,500	24,500	24,500	98,000
21		**Grand Total**	**97,990**	**94,420**	**93,239**	**87,415**	**373,064**

Comments:

The PivotTable approach is superior to the Data Consolidate approach for many reasons as follows:

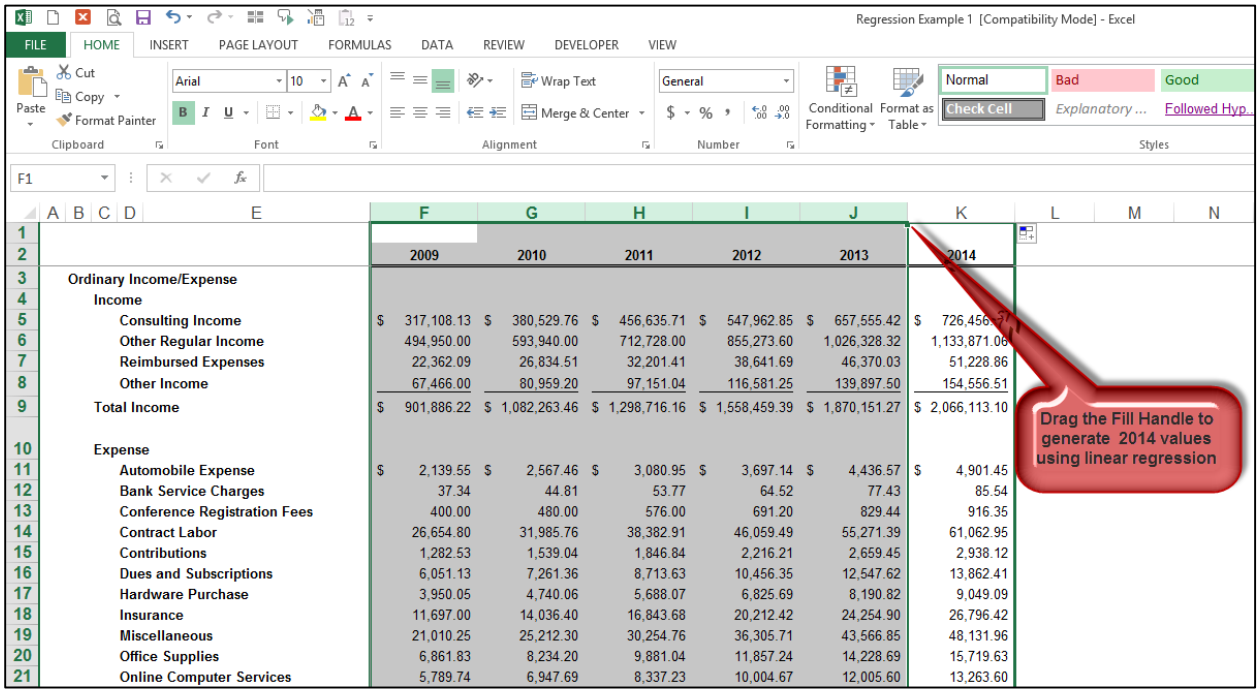
i. Totals are automatic inserted.
ii. AutoFilter buttons are automatic inserted.
iii. If the source data changes, simply click refresh to update.
iv. The resulting PivotTable is drillable.
v. The resulting PivotTable can be pivoted.
vi. The PivotTable report offers many PivotTable tools such as PivotTable formatting which Data Consolidate does not offer.

Using Regression to Create Budgets

Excel provides the ability to extrapolate data from your accounting system to produce budgets, projections or forecasts using the least squares method of linear regression. The process is extremely easy as illustrated in the following example.

A Quick Example:

In this example I have exported the income statements for the past six years from my QuickBooks accounting system. The next step is to highlight these five columns (from 2009 through 2013 as shown below), and drag the Fill Handle to project 2014 beginning budget values. *(Please note that in this example I have selected the entire columns and the Fill Handle is shown in the upper right hand corner of the selected range.)*



	2009	2010	2011	2012	2013	2014
Ordinary Income/Expense						
Income						
Consulting Income	$ 317,108.13	$ 380,529.76	$ 456,635.71	$ 547,962.85	$ 657,555.42	$ 726,456.57
Other Regular Income	494,950.00	593,940.00	712,728.00	855,273.60	1,026,328.32	1,133,871.06
Reimbursed Expenses	22,362.09	26,834.51	32,201.41	38,641.69	46,370.03	51,228.86
Other Income	67,466.00	80,959.20	97,151.04	116,581.25	139,897.50	154,556.51
Total Income	$ 901,886.22	$ 1,082,263.46	$ 1,298,716.16	$ 1,558,459.39	$ 1,870,151.27	$ 2,066,113.10
Expense						
Automobile Expense	$ 2,139.55	$ 2,567.46	$ 3,080.95	$ 3,697.14	$ 4,436.57	$ 4,901.45
Bank Service Charges	37.34	44.81	53.77	64.52	77.43	85.54
Conference Registration Fees	400.00	480.00	576.00	691.20	829.44	916.35
Contract Labor	26,654.80	31,985.76	38,382.91	46,059.49	55,271.39	61,062.95
Contributions	1,282.53	1,539.04	1,846.84	2,216.21	2,659.45	2,938.12
Dues and Subscriptions	6,051.13	7,261.36	8,713.63	10,456.35	12,547.62	13,862.41
Hardware Purchase	3,950.05	4,740.06	5,688.07	6,825.69	8,190.82	9,049.09
Insurance	11,697.00	14,036.40	16,843.68	20,212.42	24,254.90	26,796.42
Miscellaneous	21,010.25	25,212.30	30,254.76	36,305.71	43,566.85	48,131.96
Office Supplies	6,861.83	8,234.20	9,881.04	11,857.24	14,228.69	15,719.63
Online Computer Services	5,789.74	6,947.69	8,337.23	10,004.67	12,005.60	13,263.60

Using the Fill Handle to Create a Budget for 2014 based on Five Years of Actual Data

Why Does This Work?

But why does this work? How can a simple drag of a mouse create a sophisticated budget? To better understand the underlying workings of this concept, let's start with a more simplified example using simple regression.

Simple Regression Example:

In the screen below we start with three columns of data for the months of ***January***, ***February*** and ***March***.

	A	B	C	D	E	F	G
1	Sales Forecast for the Second Quarter						
2							
3		Jan	Feb	Mar			
4	Dept 1	343	476	588			
5	Dept 2	455	459	755			
6	Dept 3	327	633	589			
7	Dept 4	432	455	512			
8		1,557	2,023	2,444			
9							

Start with Three Simple Columns of Data

Simply highlight the three columns and drag the Fill Handle out an additional three columns. The result is that Excel fills in new columns for ***April***, ***May*** and ***June*** – including column headings, column totals and forecast data, as pictured below.

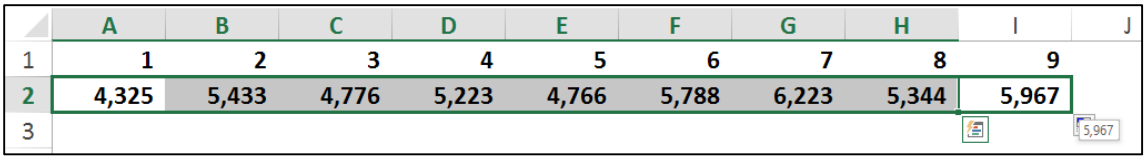
	A	B	C	D	E	F	G
1	Sales Forecast for the Second Quarter						
2							
3		Jan	Feb	Mar	Apr	May	Jun
4	Dept 1	343	476	588	714	837	959
5	Dept 2	455	459	755	856	1,006	1,156
6	Dept 3	327	633	589	778	909	1,040
7	Dept 4	432	455	512	546	586	626
8		1,557	2,023	2,444	2,895	3,339	3,782

*The Fill Handle Uses Regression to Project **April, May** and **June***

Explaining Regression:

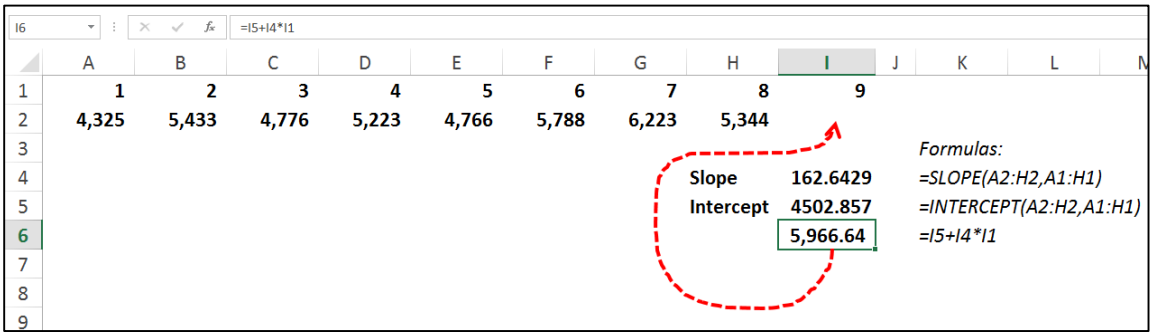
So where does this new data come from? The answer is that Excel uses linear regression to produce this data. Excel evaluates the data for ***January, February,*** and ***March*** on a row by row basis, and uses this information to project the subsequent variables. To help you better understand this concept, here is how regression works from a visual perspective:

1. Once again, a simple example using Excel's Fill handle. The 8 month's of data yields a projected value of 5,967.



	A	B	C	D	E	F	G	H	I	J
1	1	2	3	4	5	6	7	8	9	
2	4,325	5,433	4,776	5,223	4,766	5,788	6,223	5,344	5,967	
3										

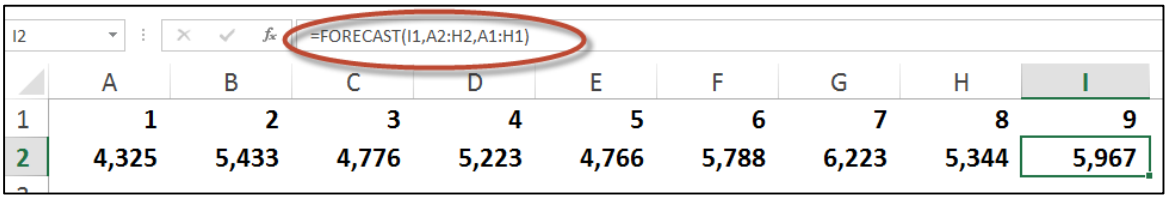
2. This time we use the same data, but instead of using the Fill handle, we use the **SLOPE** and **INTERCEPT** functions to solve for month 9's projected value.



	A	B	C	D	E	F	G	H	I	J	K	L
1	1	2	3	4	5	6	7	8	9			
2	4,325	5,433	4,776	5,223	4,766	5,788	6,223	5,344				
3											*Formulas:*	
4								Slope	162.6429		*=SLOPE(A2:H2,A1:H1)*	
5								Intercept	4502.857		*=INTERCEPT(A2:H2,A1:H1)*	
6									5,966.64		*=I5+I4*I1*	
7												
8												
9												

As you can see above, the slope and intercept functions produce the exact same result as does dragging the Fill Handle, thus proving that the math used by Excel is accurate.

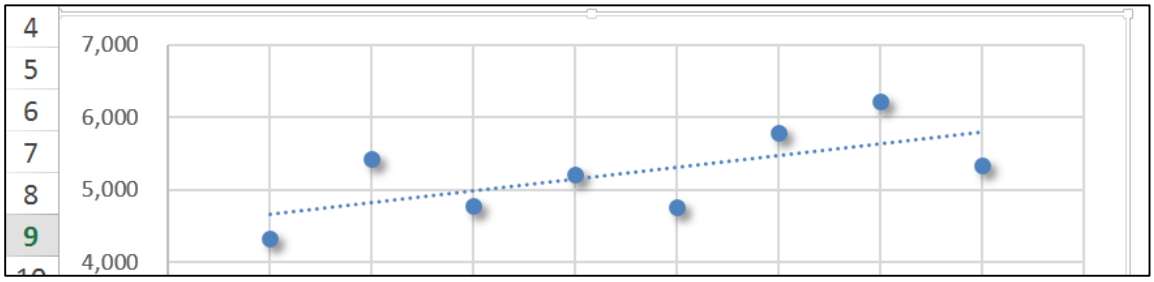
Yet another way to produce the same results is to use the **FORECAST** function, as follows:



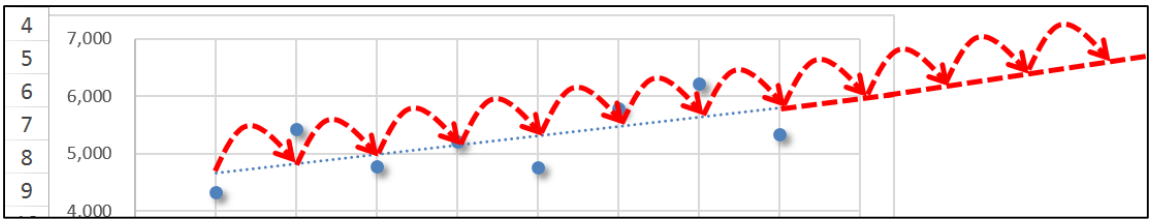
	A	B	C	D	E	F	G	H	I
1	1	2	3	4	5	6	7	8	9
2	4,325	5,433	4,776	5,223	4,766	5,788	6,223	5,344	5,967

As you can see in this above example, the **FORECAST** function also produces the same result as the Fill Handle and the **SLOPE** & **INTERCEPT** calculations.

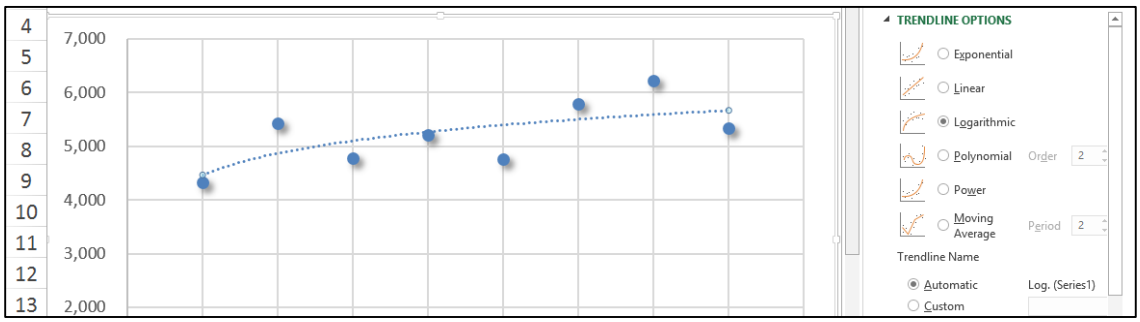
All three of these forecast calculations, which produce the same identical values, can be viewed visually by creating a **Scatter Chart**, and then applying a **Trendline**, as follows:



The dotted trend line above is based on linear regression as described in the preceding paragraphs. To forecast future values, Excel simply extends this trend line, and then uses the intervals of the original data to plot future values, as suggested by the red dotted arrows below.



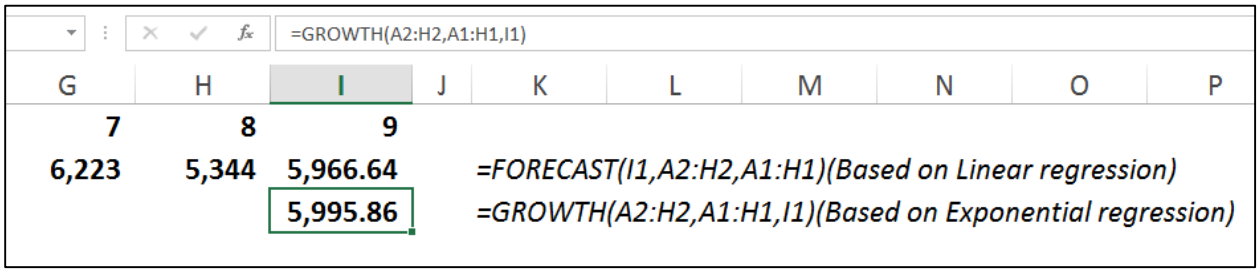
Now watch what happens when we base the trendline on logarithmic regression instead of linear regression. In the chart below, we see that the trendline is now curving slightly.



Non-Linear Regression:

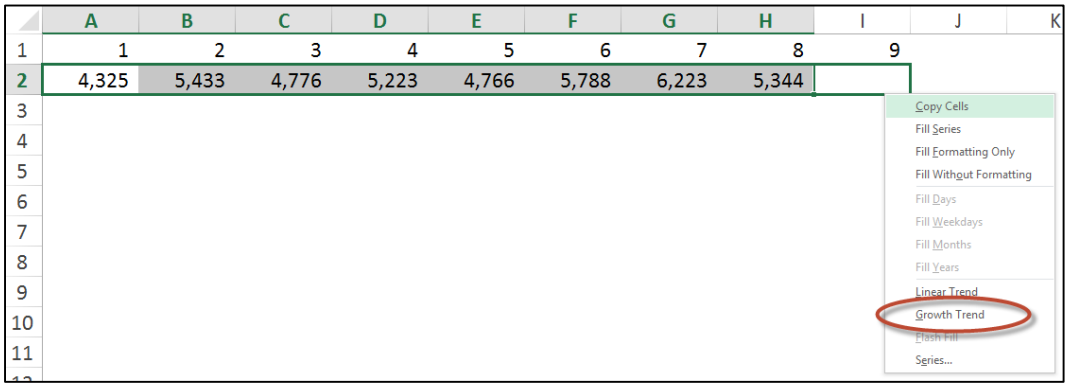
Excel provides 5 forms of non-linear regression *(as shown in the Trendline Options box in the image above)* – Exponential, Logarithmic, Polynomial, Power and Moving Average. Collectively, these 5 Trendline options are based on different forms of non-linear regression, which is explained in detail on this Wikipedia page http://en.wikipedia.org/wiki/Nonlinear_regression**.** The Wikipedia's explanation is very complicated, but to simplify: non-linear calculations weight the data points differently based on their position on the trendline (with linear regression all data points are weighted the same). Some mathematicians and CPAs maintain that non-linear methods produce more accurate results as more recent data points tend to be more relevant to producing a trend than older data points.

You can calculate forecast values in Excel using the Exponential form of regression by using the **GROWTH** function, as follows.



Notice that the projected value for month 9 is 5,995.86 using Exponential regression, which in this example which is 29.22 higher than the projected value based on linear regression.

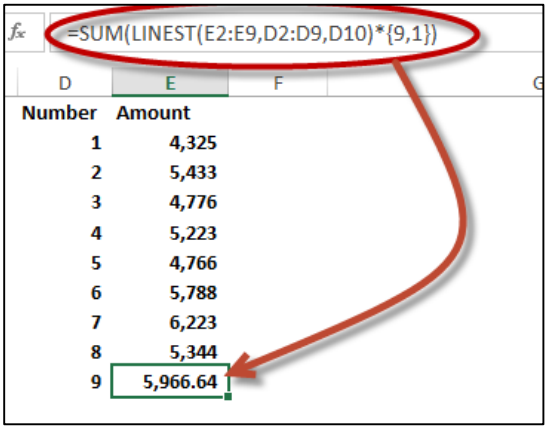
The simplest way to forecast values using **Exponential** regression is to drag the **Fill Handle** while holding down the right mouse button, then selecting Growth from the popup menu as pictured below.



This action will fill in the 9th month with a forecast value based on exponential regression instead of linear regression.

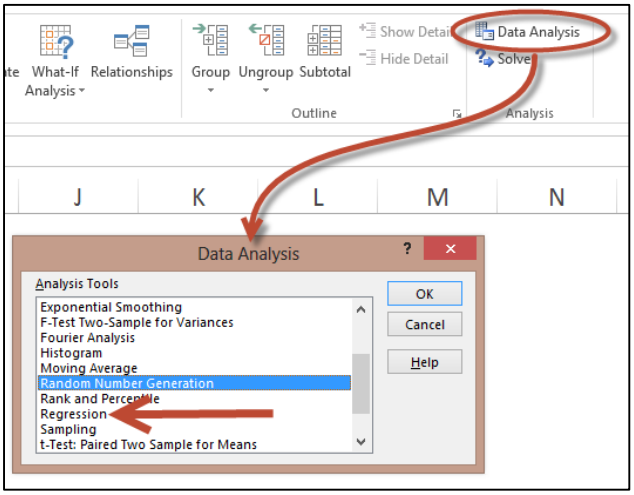
LINEST and TREND Functions

Although not used in this case study, you should be aware that Excel provides two additional forecasting functions - **LINEST** and **TREND.** These functions basically forecast values using linear regression exactly like the **FORECAST** function. The **FORECAST** and **TREND** functions are simpler to use than **LINEST**, but the advantage of the **LINEST** function is that it can also be used as an **Array** function to fill in values for a large range of data. Presented below is a simple example of the **LINEST** function.

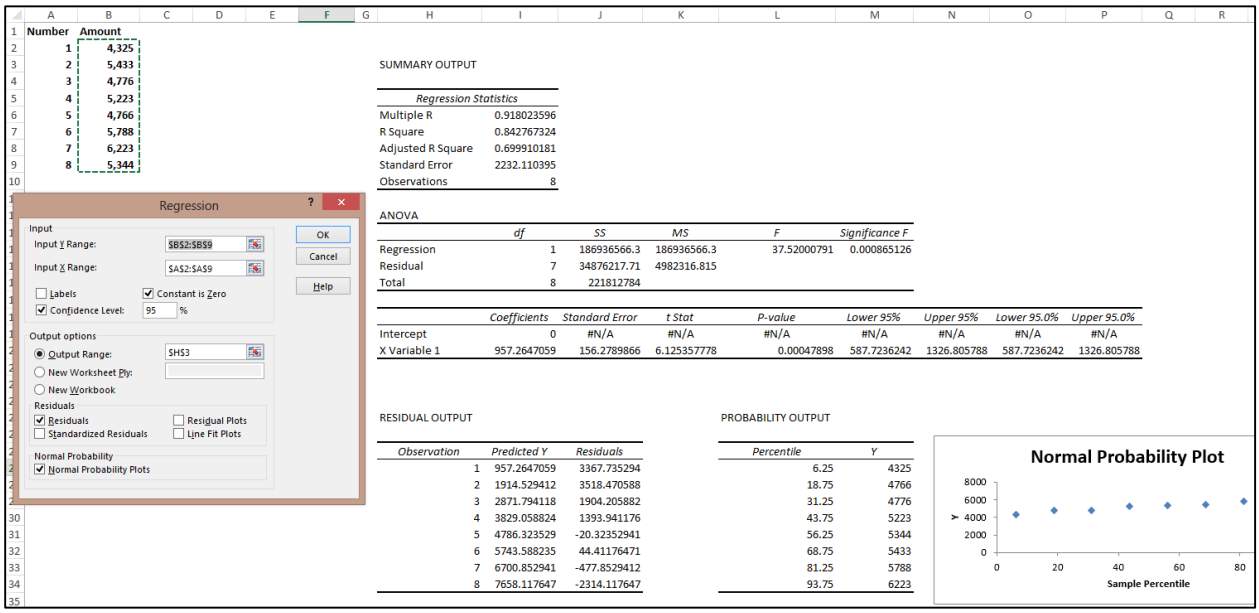


Data Analysis ToolPak

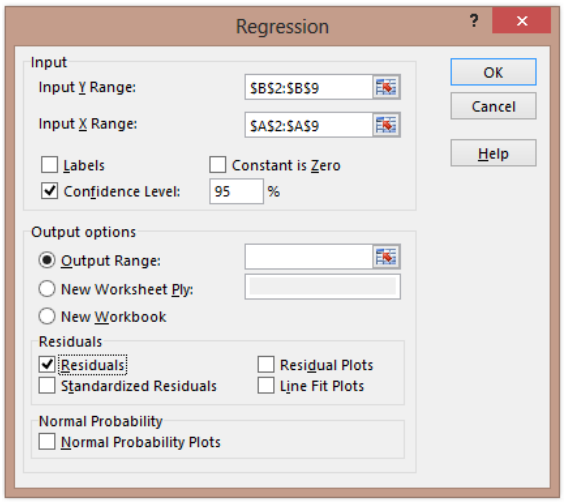
To use the LINEST function most efficiently, you should first load Excel's Analysis ToolPak, as follows. From the **File** tab, select **Options**, **Add-Ins**. In the Manage box, select **Excel Add-ins,** then click **Go**. In the Add-Ins dialog box, select the **Analysis ToolPak** check box, and then click OK. The Data Analysis ToolPak will then appear in your Data Ribbon.



The **Data Analysis ToolPak's** Regression analysis tool uses the **LINEST** function to perform more complicated regression analysis which includes controlling the confidence levels and calculating and plotting residuals. The screenshot below shows an example of the Analysis ToolPak's Regression tool along (shown in the dialog box) and an example of the output generated by this tool beginning in column H. As you can see the output is very complicated, but the resulting output can then be used to fine tune various regression calculations.



Closer inspection of the ToolPak's regression tool reveals options for setting the **Constant to Zero**, adjusting the **Confidence Level**, and utilizing a combination of **Residuals**, **Standardized Residuals**, **Residual Plots**, **Line Fit Plots**, and **Normal Probability Plots**.



These detailed aspects of regression are beyond the scope for our particular budgeting purposes, but following are links for those that wish to delve further:

1. The 2002 report ***Using Dummy Variables in Regression*** by Hun Myoung Park of Indiana University (www.iuj.ac.jp/faculty/kucc625/documents/dummy.pdf is a good place to start for educating yourself about these variables.

2. This Wikipedia page titled ***Errors and residuals in statistics*** goes further in depth into residuals. (http://en.wikipedia.org/wiki/Errors_and_residuals_in_statistics)

3. A 6-page Duke University report walking you through an example for using the Data Analysis ToolPak's Regression tool is available here (http://tinyurl.com/cueqap2).

Shortcomings with the Data Analysis ToolPak's Regression Tool:

To be fair, I should point out that Excel's ToolPak Regression tool has a number of shortcomings, including:

1. ***Missing Functionality*** – Other regression tools offer hierarchical regression and case weighting, but Excel's tool does not.

2. ***Inadequate Diagnostic Charts*** - Several common diagnostic charts are not included in Excel (for example, scatterplot charts, residuals against predicted values, and normality plot of the residuals.) Charting typically goes hand-in-hand with forecasting to help visualize the results.

3. ***No Standardized Coefficients*** – Without a standardized coefficient, it may be difficult to interpret your results.

4. ***Inadequate Diagnostic Statistics*** – The lack of collinearity diagnostics makes it more difficult to understand the forecast data model, although Excel's **PEARSON, RSQAURE** and **SKEW** functions could be used to aide in understanding.

Two More Statistical Measures

Two other Excel functions that might also be useful for analyzing the suitability of data for regression include **KURTOSIS** and **SKEW**, which both measure the symmetry of data along a bell curve. For example, data that is perfectly symmetrical will yield a **SKEW** score of 0 (zero). The closer a data's **SKEW** is to zero, the less suitable that data is for regression, because the data's trend is considered unreliable, be it trending upwards or downwards. The **KURTOSIS** works similarly, although it's scoring is different as it is designed to measure multiple peaks, whereas the **SKEW** measures a single Peak.

Alternatives To Regression

If data is found to be inadequate for regression calculations, then other forecasting methods will be necessary. For example, you might:

1. **Inflation Forecasting -** Forecast future amounts based on prior year amounts inflated for inflation, increases in the consumer price index, or some other inflation factor.

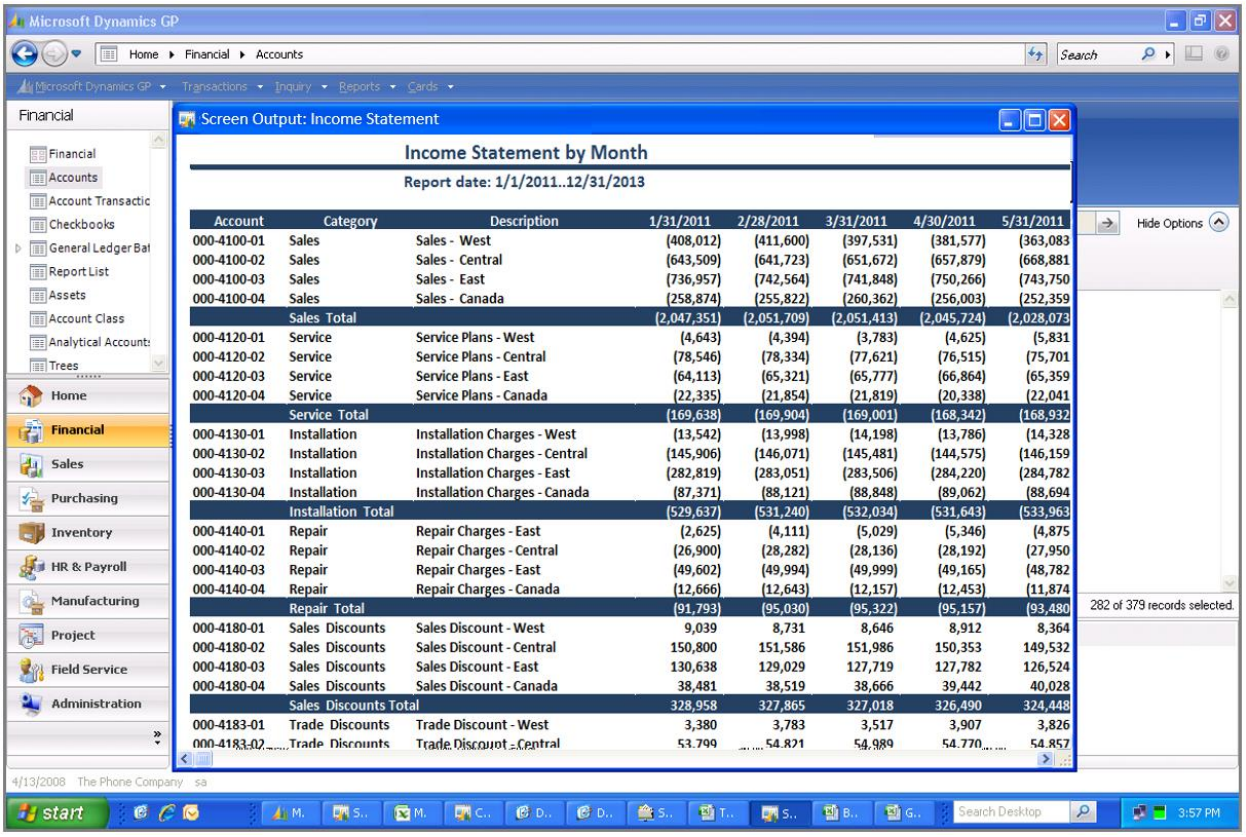
2. **Percentage Forecasting** - Forecast future amounts as a percentage of another line item, such as sales or payroll. For example, **Cost of Goods Sold (COGS)** might be forecast as 45% of forecast **Sales** since historically, COGS does approximate that percentage amount. Or you might forecast **Fringe Benefits** as 15% of **Payroll** since historically, **Fringe Benefits** do approximate that percentage amount.

3. **Best Guess Forecasting** - You might come up with another forecast amount based on discussions with department heads. For example, the training budget might be forecast much higher than regression, inflation, or percentage methods because you know that since the new version of Windows 8 and Office 2013 will be implemented, a significantly higher than normal amount of training will be needed to bring everyone up to speed on those products.

Detailed Budget Example Using Regression

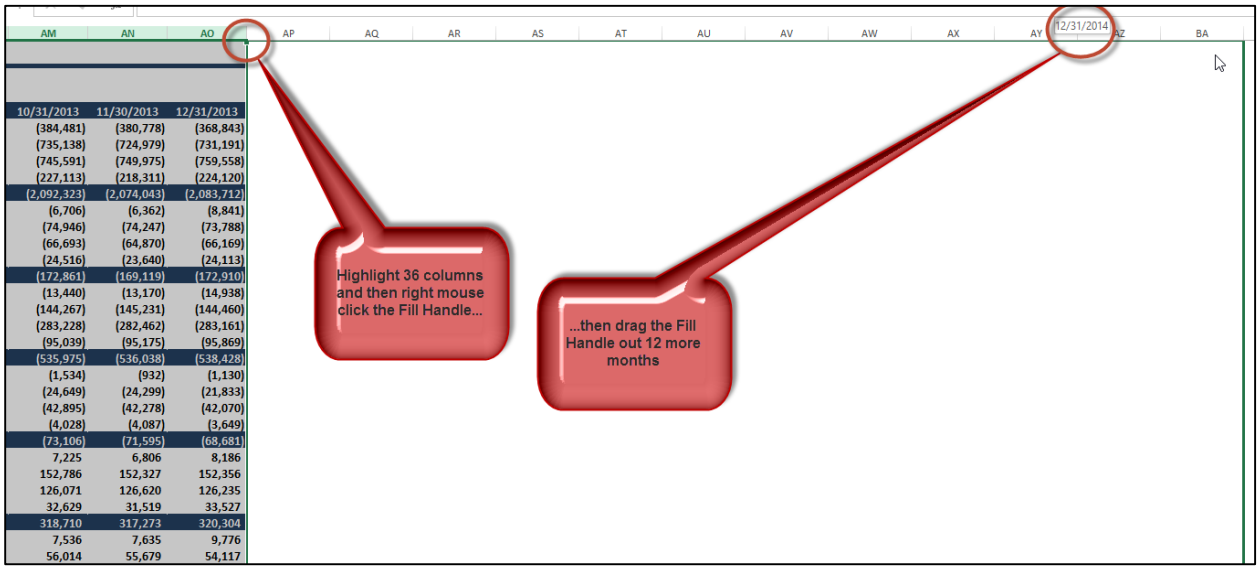
Starting with Dynamics GP

Now that we've discussed the various concepts related to regression, you are now ready to see it in action. In this example, we will start by exporting 4 years' worth of income statement data from Dynamics GP to Microsoft Excel (virtually every accounting system on the planet enables users to complete this step). In Dynamics GP, we start by printing a 36-month income statement to the screen (as pictured below) and exporting it to Excel.


Microsoft Dynamics GP
Home ▸ Financial ▸ Accounts
Search
Microsoft Dynamics GP Transactions Inquiry Reports Cards
Financial
Financial
Accounts
Account Transactic
Checkbooks
General Ledger Bal
Report List
Assets
Account Class
Analytical Accounts
Trees
Home
Financial
Sales
Purchasing
Inventory
HR & Payroll
Manufacturing
Project
Field Service
Administration
Screen Output: Income Statement
Income Statement by Month
Report date: 1/1/2011..12/31/2013
Account Category Description 1/31/2011 2/28/2011 3/31/2011 4/30/2011 5/31/2011
000-4100-01 Sales Sales - West (408,012) (411,600) (397,531) (381,577) (363,083
000-4100-02 Sales Sales - Central (643,509) (641,723) (651,672) (657,879) (668,881
000-4100-03 Sales Sales - East (736,957) (742,564) (741,848) (750,266) (743,750
000-4100-04 Sales Sales - Canada (258,874) (255,822) (260,362) (256,003) (252,359
Sales Total (2,047,351) (2,051,709) (2,051,413) (2,045,724) (2,028,073
000-4120-01 Service Service Plans - West (4,643) (4,394) (3,783) (4,625) (5,831
000-4120-02 Service Service Plans - Central (78,546) (78,334) (77,621) (76,515) (75,701
000-4120-03 Service Service Plans - East (64,113) (65,321) (65,777) (66,864) (65,359
000-4120-04 Service Service Plans - Canada (22,335) (21,854) (21,819) (20,338) (22,041
Service Total (169,638) (169,904) (169,001) (168,342) (168,932
000-4130-01 Installation Installation Charges - West (13,542) (13,998) (14,198) (13,786) (14,328
000-4130-02 Installation Installation Charges - Central (145,906) (146,071) (145,481) (144,575) (146,159
000-4130-03 Installation Installation Charges - East (282,819) (283,051) (283,506) (284,220) (284,782
000-4130-04 Installation Installation Charges - Canada (87,371) (88,121) (88,848) (89,062) (88,694
Installation Total (529,637) (531,240) (532,034) (531,643) (533,963
000-4140-01 Repair Repair Charges - East (2,625) (4,111) (5,029) (5,346) (4,875
000-4140-02 Repair Repair Charges - Central (26,900) (28,282) (28,136) (28,192) (27,950
000-4140-03 Repair Repair Charges - East (49,602) (49,994) (49,999) (49,165) (48,782
000-4140-04 Repair Repair Charges - Canada (12,666) (12,643) (12,157) (12,453) (11,874
Repair Total (91,793) (95,030) (95,322) (95,157) (93,480
000-4180-01 Sales Discounts Sales Discount - West 9,039 8,731 8,646 8,912 8,364
000-4180-02 Sales Discounts Sales Discount - Central 150,800 151,586 151,986 150,353 149,532
000-4180-03 Sales Discounts Sales Discount - East 130,638 129,029 127,719 127,782 126,524
000-4180-04 Sales Discounts Sales Discount - Canada 38,481 38,519 38,666 39,442 40,028
Sales Discounts Total 328,958 327,865 327,018 326,490 324,448
000-4183-01 Trade Discounts Trade Discount - West 3,380 3,783 3,517 3,907 3,826
Hide Options
282 of 379 records selected.
4/13/2008 The Phone Company sa
start
Search Desktop
3:57 PM

Next in Excel, Regression Creates the Initial Budget

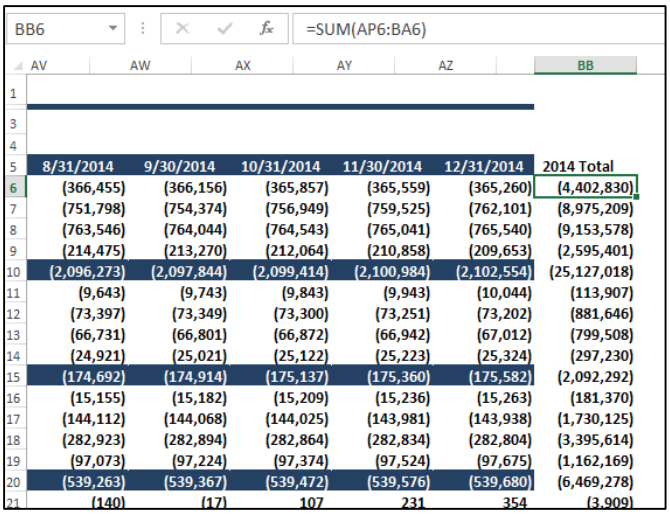
Once in Excel, to create the initial budget, select the 36 columns with numeric data, then left click and drag the "Fill Handle" out twelve additional columns to create the 2014 budget, as suggested below.



The result is that Excel uses linear regression analysis to predict the future values. Keep in mind that this is just an initial starting point.

Budget Totals

Now that we have generated regression amounts, and overwritten those amounts where we have more accurate numbers and also those where regression is not suitable, we continue by totaling the 12 months to produce the annual 2014 budget amounts, as pictured below.



The purpose of totaling the annual budget is so we can adjust the monthly budget for seasonality, as discussed below.

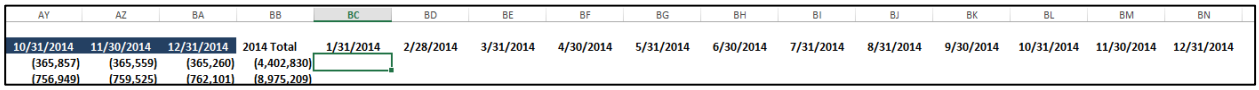
Adjusting for Seasonality

Annual budget amounts are not very useful because they do not allow you to compare actual to budgeted results on a monthly basis – you must produce monthly budget amounts. However, simply dividing an annual budget by 12 to produce monthly amounts is not good enough because many line items are typically seasonal. For example, actual revenue may be twice as high in some months compared to other months, but comparing these seasonal sales amounts to a non-seasonal budget is virtually meaningless because you can't tell whether you are on target, off target, or by how much. Therefore, it is difficult to determine whether corrective measures are needed on a month to month basis.

Seasonal budgets make a big difference. I believe one of the primary reasons companies fail to properly analyze their budgets to actuals throughout the year is because their budgets are not seasonal to begin with, and therefore such comparisons are virtually meaningless.

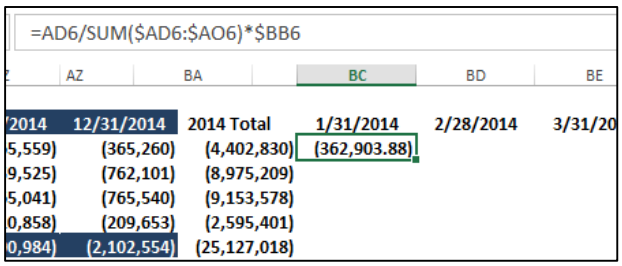
To add seasonality to your budget; simply spread the annual amount of each budget line item across the 12 months based on the ratio of last's year's monthly amounts compared to last year's annual amount, as follows.

Start by creating column headings for the seasonal budget, as pictured below.



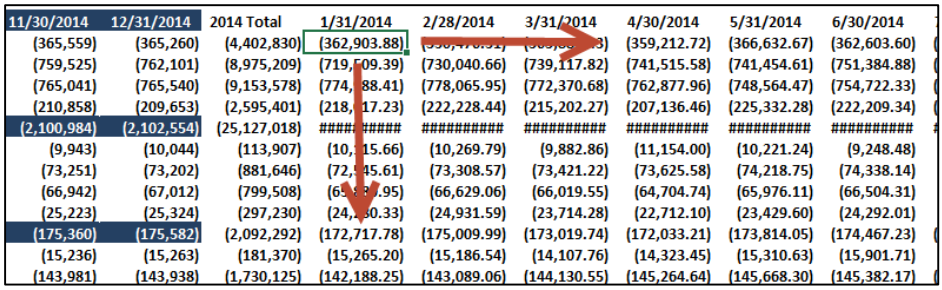
AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN
10/31/2014	11/30/2014	12/31/2014	2014 Total	1/31/2014	2/28/2014	3/31/2014	4/30/2014	5/31/2014	6/30/2014	7/31/2014	8/31/2014	9/30/2014	10/31/2014	11/30/2014	12/31/2014
(365,857)	(365,559)	(365,260)	(4,402,830)												
(756,949)	(759,525)	(762,101)	(8,975,209)												

Next, enter a formula using last year's January value (as of January 2013) as a the numerator and the **SUM** of all of 2013's values as the denominator, and then multiplied times the 2014 annual budget amount (**=AD6/SUM($AD6:$AO6)*$BB6**), as pictured below.



2014	12/31/2014	2014 Total	1/31/2014	2/28/2014	3/31/20
5,559)	(365,260)	(4,402,830)	(362,903.88)		
9,525)	(762,101)	(8,975,209)			
5,041)	(765,540)	(9,153,578)			
0,858)	(209,653)	(2,595,401)			
0,984)	(2,102,554)	(25,127,018)			

Notice in this formula I have used dollar signs to anchor the column references so that I may copy the formula down and across to complete the seasonality adjustments.



11/30/2014	12/31/2014	2014 Total	1/31/2014	2/28/2014	3/31/2014	4/30/2014	5/31/2014	6/30/2014
(365,559)	(365,260)	(4,402,830)	(362,903.88)	[illegible]	[illegible]	(359,212.72)	(366,632.67)	(362,603.60)
(759,525)	(762,101)	(8,975,209)	(719,[illegible]09.39)	(730,040.66)	(739,117.82)	(741,515.58)	(741,454.61)	(751,384.88)
(765,041)	(765,540)	(9,153,578)	(774,[illegible]88.41)	(778,065.95)	(772,370.68)	(762,877.96)	(748,564.47)	(754,722.33)
(210,858)	(209,653)	(2,595,401)	(218,[illegible]17.23)	(222,228.44)	(215,202.27)	(207,136.46)	(225,332.28)	(222,209.34)
(2,100,984)	(2,102,554)	(25,127,018)	##########	##########	##########	##########	##########	##########
(9,943)	(10,044)	(113,907)	(10,[illegible]15.66)	(10,269.79)	(9,882.86)	(11,154.00)	(10,221.24)	(9,248.48)
(73,251)	(73,202)	(881,646)	(72,[illegible]45.61)	(73,308.57)	(73,421.22)	(73,625.58)	(74,218.75)	(74,338.14)
(66,942)	(67,012)	(799,508)	(65,[illegible]97.95)	(66,629.06)	(66,019.55)	(64,704.74)	(65,976.11)	(66,504.31)
(25,223)	(25,324)	(297,230)	(24,[illegible]00.33)	(24,931.59)	(23,714.28)	(22,712.10)	(23,429.60)	(24,292.01)
(175,360)	(175,582)	(2,092,292)	(172,717.78)	(175,009.99)	(173,019.74)	(172,033.21)	(173,814.05)	(174,467.23)
(15,236)	(15,263)	(181,370)	(15,265.20)	(15,186.54)	(14,107.76)	(14,323.45)	(15,310.63)	(15,901.71)
(143,981)	(143,938)	(1,730,125)	(142,188.25)	(143,089.06)	(144,130.55)	(145,264.64)	(145,668.30)	(145,382.17)

Rounding & Formatting

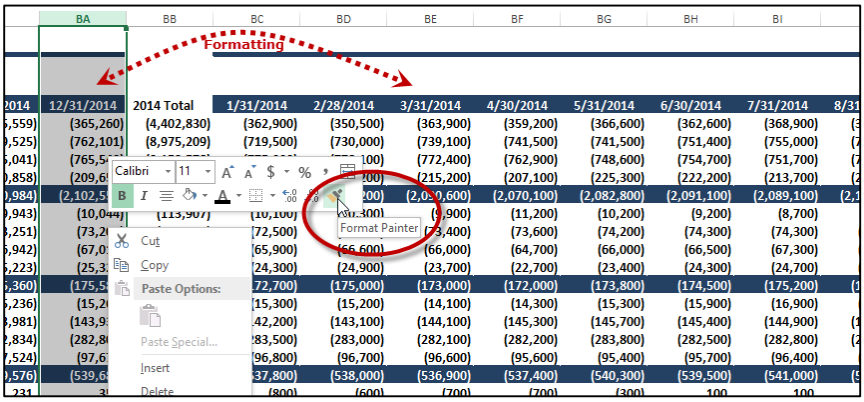
It is rather senseless to produce budgets with pennies, or even dollars; I recommend rounding the results by editing the seasonality formula. Edit the seasonality formula adding the ROUND function in front of the formula and "-2" to the end of the formula to round to the nearest hundredths, as pictured.

=ROUND((AD6/SUM($AD6:$AO6)*$BB6),-2)

Now recopy this revised formula (overwriting the previous seasonally adjusted budget data) to update the budget.

11/30/2014	12/31/2014	2014 Total	1/31/2014	2/28/2014	3/31/2014	4/30/2014	5/31/2014	6/30/2014
(365,559)	(365,260)	(4,402,830)	(362,900.00)	[illegible]	[illegible]	(359,200.00)	(366,600.00)	(362,600.00)
(759,525)	(762,101)	(8,975,209)	(719,500.00)	(730,000.00)	(739,100.00)	(741,500.00)	(741,500.00)	(751,400.00)
(765,041)	(765,540)	(9,153,578)	(775,[illegible]00.00)	(778,100.00)	(772,400.00)	(762,900.00)	(748,600.00)	(754,700.00)
(210,858)	(209,653)	(2,595,401)	(218,[illegible]00.00)	(222,200.00)	(215,200.00)	(207,100.00)	(225,300.00)	(222,200.00)
(2,100,984)	(2,102,554)	(25,127,018)	##########	##########	##########	##########	##########	##########
(9,943)	(10,044)	(113,907)	(10,[illegible]00.00)	(10,300.00)	(9,900.00)	(11,200.00)	(10,200.00)	(9,200.00)
(73,251)	(73,202)	(881,646)	(72,[illegible]00.00)	(73,300.00)	(73,400.00)	(73,600.00)	(74,200.00)	(74,300.00)
(66,942)	(67,012)	(799,508)	(65,[illegible]00.00)	(66,600.00)	(66,000.00)	(64,700.00)	(66,000.00)	(66,500.00)
(25,223)	(25,324)	(297,230)	(24,[illegible]00.00)	(2[illegible]900.00)	(23,700.00)	(22,700.00)	(23,400.00)	(24,300.00)
(175,360)	(175,582)	(2,092,292)	(172,[illegible]00.00)	(175,000.00)	(173,000.00)	(172,000.00)	(173,800.00)	(174,500.00)
(15,236)	(15,263)	(181,370)	(15,[illegible]00.00)	(15,200.00)	(14,100.00)	(14,300.00)	(15,300.00)	(15,900.00)
(143,981)	(143,938)	(1,730,125)	(142,200.00)	(143,100.00)	(144,100.00)	(145,300.00)	(145,700.00)	(145,400.00)

Finally, select a formatted column (such as column BA in this example) and click the Format Painter tool; then highlight the twelve months budget to apply the formatting, as suggested below.



Always Use Your Better Numbers When You Have Them

(This should be obvious to all, but I will say it anyway…) Of course some budget line items should never be forecast using regression or other forecasting methods because they are known amounts. For example, regression may suggest that rent expense might be $236,433.12 for January 2014, but since I have signed a lease agreement, I know that rent expense will be exactly $220,000 for January 2014, so that is the amount I will use. The same goes for known line items such as depreciation expense, web-hosting expenses, interest payments on outstanding loans, and any other contractually known obligations. You would always use these more accurate numbers instead of regression's projected numbers.

Regression Warning

Regression only works when the underlying data follows a consistent trend. If revenue has grown steadily for the past six years, then regression will likely project a reasonable value for year seven. However if revenue has jumped all over the board for the past six years, then regression will likely give you a worthless projection for year seven.

> *For example, consider that in the past five years gasoline prices jumped from $1.60 per gallon to more than $4.00 per gallon. If you use regression to predict gasoline prices for future years based on this prior increase, regression will likely predict gasoline prices in the $10.00+ per gallon range – but let's hope that such a prediction would be inaccurate – right?*

Critical Key Point to Understand

The key point is that regression represents a starting point for many of the budget line items, but not all budget line items. In all probability, a combination of forecasting methods will need to be applied depending on each particular line item – regression should not be relied upon for all forecast data.

Back to the Budget - Overwrite Those Line Items Where You Have Better Numbers

Once we have completed this process, we then insert better numbers on those line items where we have better budget amounts. For example, the current lease agreement will provide the most accurate amount to use for rent expense. We would use our depreciation schedule to provide the most accurate amounts for depreciation expense. For interest expense, we would look to the loan amortization schedule to prove these numbers (and so on). However for those numbers where you have no better basis to use for budget preparation purposes, why not use linear regression analysis to provide the answer?

To accomplish this task, it is best to use the split screen tool to split the screen into four areas so you can easily see the row descriptions and column headings for the corresponding budget line

items you are working with. (Excel 2013 no longer provides split screen tools on the scroll bars as did Excel 2003, 2007 and 2010 – you must click the **Split Screen** tool icon on the **View** tab and then adjust the splits by dragging them). Now scroll each line item and ask yourself if you have a more accurate basis for forecasting that line item, and if so, insert those more accurate values. For example, I have inserted new depreciation values (highlighted in grey) in the screenshot below.

D	E	AP	AQ	AR	AS	AT	AU
Category	Description	1/31/2014	2/28/2014	3/31/2014	4/30/2014	5/31/2014	6/30/2014
Insurance	Liability Insurance	1,058	976	895	813	732	650
Insurance	Casualty Insurance	9,899	9,863	9,827	9,792	9,756	9,720
Insurance Total		13,169	12,800	12,431	12,063	11,694	11,325
Depreciation	Depreciation Expense - Furniture & F	5,100	5,100	5,100	5,100	5,100	5,100
Depreciation	Depreciation Expense - Computer Eq	3,800	3,800	3,800	3,800	3,800	3,800
Depreciation	Depreciation Expense - Machinery &	2,400	2,400	2,400	2,400	2,400	2,400
Depreciation	Depreciation Expense - Fleet Vehicles	22,000	22,000	22,000	22,000	22,000	22,000
Depreciation	Amortization - Software	2,379	2,355	2,332	2,308	2,284	2,260
Depreciation Total		35,679	35,655	35,632	35,608	35,584	35,560
Repairs	Repairs & Maintenance Expense-Staf	10,666	10,789	10,912	11,034	11,157	11,280
Repairs	Repairs & Maintenance Expense-Line	1,652	1,529	1,405	1,282	1,158	1,035
Repairs Total		12,318	12,317	12,317	12,316	12,316	12,315
Purchases	Fixed Assets- Computer Cabinets	(1,365)	(1,477)	(1,588)	(1,700)	(1,812)	(1,924)
Purchases	Salaries and Wages - Purchasing/Rec	8,059	8,025	7,992	7,959	7,925	7,892

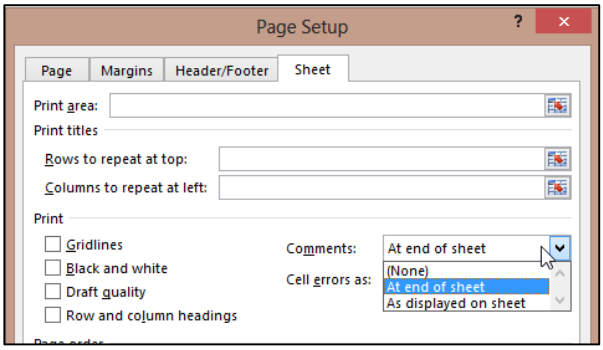
Back to the Budget - Document Your Budget Values

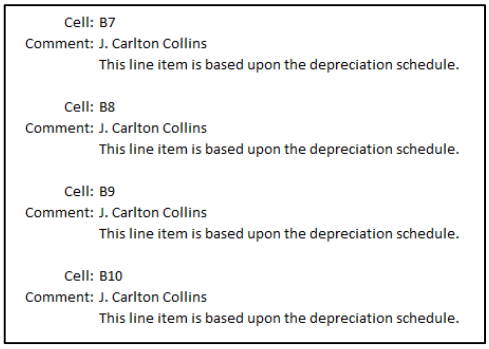
For each line item you change, you should document the basis for that budget line item with an Excel comment, (or some other method such as an adjacent in-cell comment). For example, in the screenshot below, I have inserted **Comments** next to each account description indicating the line item's forecasting basis. Comments are indicated by small red triangles in the upper right corner of a cell and the comment is displayed whenever you hover over the red tick mark with your mouse.

69		29,772	29,782	2	13,169
70	Depreciation Expense - Furniture & F	753	945		5,100
71	Depreciation Expense - Computer Eq	7,855	6,368		3,800
72	Depreciation Expense - Machinery &		6,728		2,400
73	Depreciation Expense - Fleet Vehicles		9,794	1	22,000
74	Amortization - Software		3,338		2,379
75			7,174	2	35,679
76	Repairs & Maintenance Expense-Staf	7,554	6,436		10,666
77	Repairs & Maintenance Expense-Line	5,552	5,085		1,652
78		13,106	11,521	1	12,318
79	Fixed Assets- Computer Cabinets	2,114	1,619		(1,365)
80	Salaries and Wages - Purchasing/Rec	8,004	6,934		8,059
81	Overtime Pay - Purchasing/Receiving	10,497	9,883		11,076
82	Bonuses - Purchasing/Receiving	10,395	11,416	1	14,949

J. Carlton Collins:
This line item is based upon the depreciation schedule.

To print comments, select **Page Setup** from the **Page Layout** tab, and on the **Sheet** tab select **At end of the sheet** from the **Comments** dropdown box, as pictured on the left below. Note that the comments do not show up in Print Preview, but they do appear as a printed page at the end of your print out; an example of which is pictured on the right below.





Testing Data's Suitability for Regression Calculations

Therefore, you should always visit each line item in the projection and consider whether the projected values make sense. Excel provides at least two good functions to help you accomplish this task – **PEARSON** and **RSQUARE**. For example, in the screen shot below, I have calculated the suitability of 5 different sets of data for regression, using both the **PEARSON** and **R SQUARE** functions. The first data set on row three has a perfect trend and scores a 100% in both the **PEARSON** and **R SQUARE** calculations. However, the data sets that follow are comprised of an increasingly less perfect trend, and the declining **PEARSON** and **R SQUARE** scores reflect this decline.

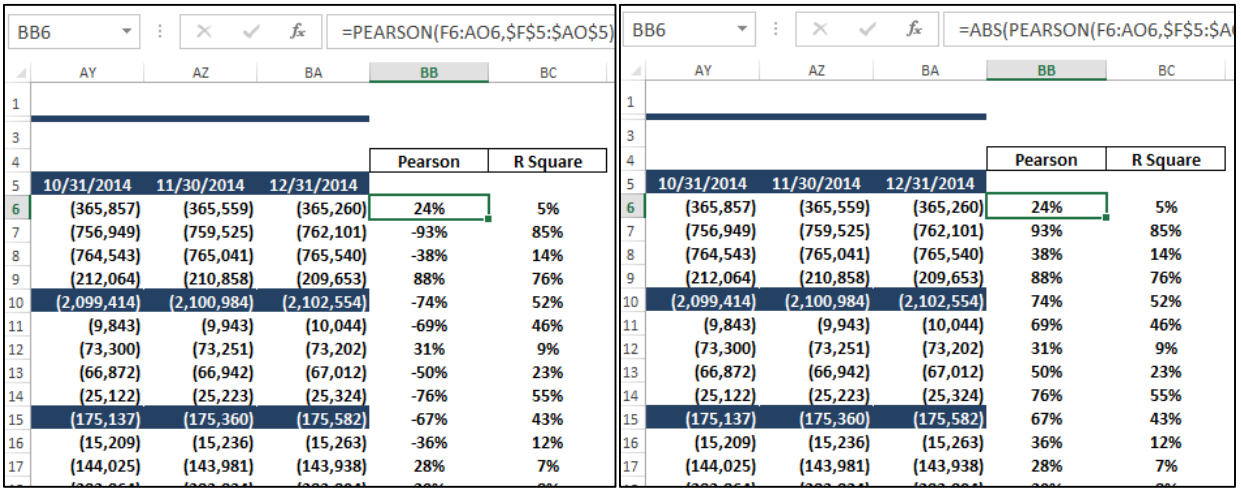
J3 =PEARSON(A3:H3,A2:H2)

	A	B	C	D	E	F	G	H	J	K
1									Pearson	R Square
2	1	2	3	4	5	6	7	8		
3	20	40	60	80	100	120	140	160	100%	100%
4										
5	1	2	3	4	5	6	7	8		
6	20	55	111	80	100	120	140	160	93%	86%
7										
8	1	2	3	4	5	6	7	8		
9	20	55	111	80	100	222	140	160	81%	66%
10										
11	1	2	3	4	5	6	7	8		
12	20	55	111	80	100	222	140	333	86%	74%
13										
14	1	2	3	4	5	6	7	8		
15	20	444	111	80	100	222	140	333	21%	4%

For example, I might conclude that the first four sets of data were found to have a sufficient trend as to provide a suitable basis for regression calculations but that the data set in row 15 does not. You should establish your threshold and consistently stick to that threshold. In this case, I might require a minimum 60% **PEARSON** score and 50% **R Square** score in order to justify reliance on that data as a basis for regression forecasting.

Back to the Budget - Testing Data for Regression Suitability

Next we will test each line item's data for regression suitability. This step will help us determine which rows, if any, need to be forecast using a method other than regression. We start this process by labeling a couple of blank columns **Pearson** and **R Square**, then enter the respective formulas to test the 36 columns of data row–by–row, as shown below, on the left.



	AY	AZ	BA	BB	BC
4				Pearson	R Square
5	10/31/2014	11/30/2014	12/31/2014		
6	(365,857)	(365,559)	(365,260)	24%	5%
7	(756,949)	(759,525)	(762,101)	-93%	85%
8	(764,543)	(765,041)	(765,540)	-38%	14%
9	(212,064)	(210,858)	(209,653)	88%	76%
10	(2,099,414)	(2,100,984)	(2,102,554)	-74%	52%
11	(9,843)	(9,943)	(10,044)	-69%	46%
12	(73,300)	(73,251)	(73,202)	31%	9%
13	(66,872)	(66,942)	(67,012)	-50%	23%
14	(25,122)	(25,223)	(25,324)	-76%	55%
15	(175,137)	(175,360)	(175,582)	-67%	43%
16	(15,209)	(15,236)	(15,263)	-36%	12%
17	(144,025)	(143,981)	(143,938)	28%	7%

	AY	AZ	BA	BB	BC
4				Pearson	R Square
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17	(144,025)	(143,981)	(143,938)	28%	7%

Notice that both the **PEARSON** and **R SQUARE** formulas return percentage values that are both negative and positive, which means the data is trending upward or downward. Since we don't care which direction the data is trending, (we only care that it scores high), we can edit the formulas to include the **ABSOLUTE** function (**ABS**) which changes all amounts to positive numbers, as picture above on the right.

Now we can set our thresholds to minimum scores, let's say 50% (Pearson) and 40% (R Square) for example, then apply conditional formatting to flush out those line items that meet our stated criteria. As pictured to the right, those line items in columns BB and BC containing formatting are not suitable for regression based on our stated criterion level, and another forecasting method will need to be used to forecast those amounts. For example, we may simply use last year's number inflated by the consumer price index.

	AY	AZ	BA	BB	BC
37	90,320	90,100	89,881	77%	57%
38	129,144	129,175	129,206	16%	2%
39	40,504	40,423	40,342	50%	23%
40	270,255	270,070	269,885	75%	55%
41	18,490	18,793	19,095	96%	91%
42	94,139	94,017	93,896	81%	64%
43	132,699	132,837	132,975	71%	49%
44	42,763	42,607	42,450	82%	66%
45	288,091	288,254	288,416	60%	34%
46	(3,604)	(3,670)	(3,736)	70%	47%
47	248	202	155	31%	9%
48	3,318	3,418	3,518	79%	60%
49	4,924	5,101	5,278	66%	42%
50	13,004	13,273	13,543	96%	91%
51	(8,027)	(8,236)	(8,444)	90%	80%
52	9,678	9,852	10,025	87%	74%
53	(9,951)	(10,164)	(10,378)	94%	88%
54	(9,843)	(10,083)	(10,323)	91%	82%
55	(253)	(307)	(362)	19%	3%
56	5,095	5,240	5,384	90%	80%
57	208,956	208,827	208,697	79%	61%
58	9,388	9,346	9,304	40%	15%
59	(6,244)	(6,540)	(6,835)	85%	71%
60	13,104	13,209	13,315	89%	78%
61	2,416	2,232	2,048	83%	68%
62	1,632	1,423	1,215	87%	75%
63	6,231	6,416	6,602	72%	50%
64	240,578	240,154	239,730	76%	56%
65	8,414	8,375	8,335	37%	13%
66	(8,467)	(8,679)	(8,891)	86%	72%
67	324	243	161	57%	31%
68	9,577	9,542	9,506	24%	5%
69	9,849	9,480	9,112	76%	56%
70	5,629	5,755	5,880	80%	62%
71	3,511	3,435	3,358	72%	49%
72	1,896	1,800	1,705	79%	61%
73	23,011	23,335	23,659	96%	92%
74	2,165	2,141	2,117	28%	7%
75	36,213	36,466	36,719	70%	47%
76	11,772	11,895	12,017	82%	65%
77	541	417	294	89%	78%
78	12,312	12,312	12,311	1%	0%

Budgeting Balance Sheets and Cash Flow

In many cases, budgets consist of a profit and loss statement only, but I believe this falls short.

By creating a budgeted balance sheet and cash flow statement, (which requires the creation of a budgeted balance sheet), a company can truly monitor expected results for every account, including the all-important cash flow balance. The process starts by forecasting the balance sheet and once created, forecasting cash flow is a simple matter of crunching the numbers.

To produce a budgeted balance sheet, assumptions are needed related to the days in accounts receivable, accounts payable and inventory. These day calculations are best derived by examining the historical days in accounts receivable, accounts payable and inventory for recent years, and using those amounts as a guide. For example:

1. **AR** - The budgeted accounts receivable balance may be calculated as 46 days of the prior month's sales.

2. **AP -** The budgeted accounts payable balance may be calculated as 28 days of the prior month's variable expenses.

3. **Inventory** - The budgeted inventory balance may be calculated as 62 days of the prior month's COGS amount.

4. **Loan Payments** – Loan repayments should be budgeted based on the actual amortization schedules, based on the principle payment amounts.

5. And so on.

Once the balance sheet items have been budgeted, the resulting cash flow budget is computed as follows:

	A	B	C	D	E	F	G	H	I
2		Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
3	Beginning Cash		1,000	3,500	6,450	8,150	8,060	7,500	8,010
4									
5	**Budgeted P&L:**								
6	Revenue		10,000	11,000	12,100	8,000	6,200	15,000	16,500
7	COGS		4,000	4,400	4,840	3,200	2,480	6,000	6,600
8	Gross Margin		6,000	6,600	7,260	4,800	3,720	9,000	9,900
9									
10	Expense 1		500	-	-	-	500	-	-
11	Expense 2		600	1,450	1,750	1,200	800	600	600
12	Expense 3		200	200	200	700	700	1,000	1,000
13	Expense 4		400	400	400	-	-	600	600
14	Expense 5		700	200	450	500	600	600	300
15	Expense 6		1,200	1,200	2,800	3,300	2,100	4,300	3,000
16	Expense 7		100	200	100	200	50	50	100
17	Total Expenses		3,700	3,650	5,700	5,900	4,750	7,150	5,600
18									
19	Profit/Loss		2,300	2,950	1,560	(1,100)	(1,030)	1,850	4,300
20									
21	**Budgeted Balance Sheet:**								
22	A/R (46 days of sales)	1,150	1,260	1,390	1,520	1,010	780	1,890	2,080
23	A/P (28 days of expenses)	(270)	(270)	(270)	(410)	(430)	(350)	(520)	(410)
24	Inventory (62 days of COGS)	790	680	750	820	540	420	1,020	1,120
25	Loan Balance (From Amort. Schedule)	4,200	4,000	3,800	3,600	3,400	3,200	3,000	2,800
26									
27	Change in A/R		(110)	(130)	(130)	510	230	(1,110)	(190)
28	Change in A/P		-	-	140	20	(80)	170	(110)
29	Change in Inventory		110	(70)	(70)	280	120	(600)	(100)
30	Change in Loan		200	200	200	200	200	200	200
31									
32	Ending Cash		3,500	6,450	8,150	8,060	7,500	8,010	12,110

The area in yellow (rows 5 through 19) shows the profit and loss budget as projected using the methods described earlier above. The blue area (rows 21 through 25) depicts the assumptions and the changes in balance sheet balances. The green areas (rows 26 through 32) represent the forecast balance sheets and cash flow forecast. Because the income statement is seasonalized, the balance sheet balances and cash flow forecast will also be seasonalized.

This Income Statement Budget Is Not Yet Completed

At this point, we have prepared a complete monthly budget using regression supplemented with other forecasting methods, and this effort may be sufficient for your needs. However, please be aware that this budget example was simplified in order to more easily convey Excel's regression tools and concepts. There is more to the process for those truly dedicated to creating the most accurate budget possible – keep reading.

Forecasting Revenue

In the example above, for the purpose of explaining regression as simply as possible, I treated the budgeting process for revenue exactly the same as the budgeting process for expenses, but in reality budgeting revenue is usually a different process from budgeting expenses.

For established companies, many projected expenses can be reasonably determined using regression, inflation, percentage of sales or best guess forecasting methods. However, revenue is subject to far greater external factors such as competition, marketing, the state of the economy, inflationary pressures, changing attitudes, etc. For example, the appearance of a new competitor in the marketplace could steal away market share and thus negatively impact revenue. For example, in late 2012 Apple shares fell from $700 a share to almost $400 a share for no other reason than the prospects that Microsoft's, Google's and Samsung's new tablet PC offerings were expected to eat into Apple's market share.

Negative press related to the quality of your product (such as the gas pedal sticking for Toyotas) could adversely affect sales. By contrast, your product may become wildly popular if a well know celebrity starts wearing or using your product. A good marketing campaign can help significantly, or hurt if it happens to make the wrong impression.

The point is that regression is unable to incorporate factors like this, therefore a more detailed forecasting approach is usually needed. A good budget will consider all of the relevant factors and in the end, you may produce multiple budgets given differing anticipated scenarios.

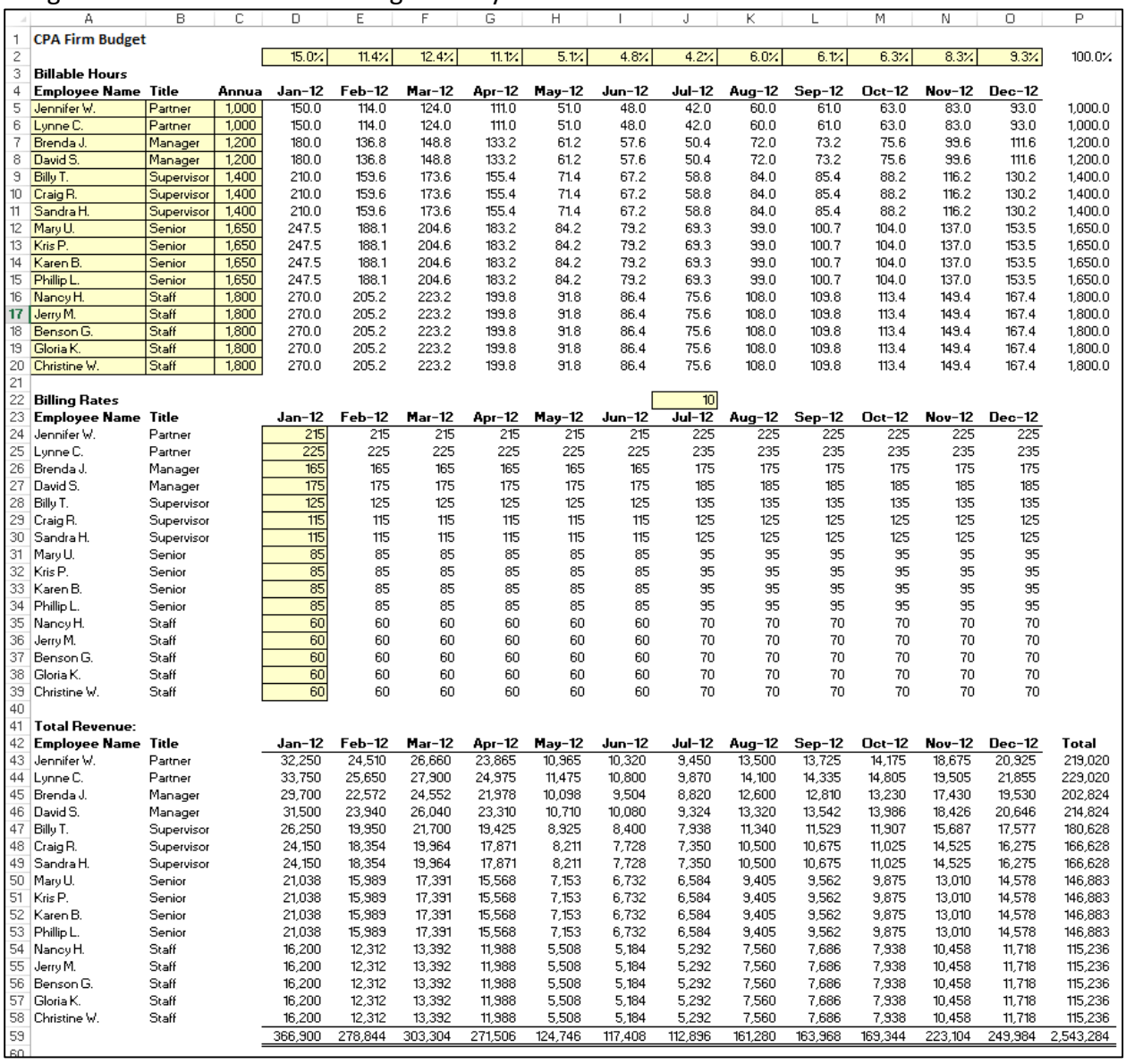
Simple Example of Revenue Projection Based on Units

In the following example, Crazy Fred's has listed the number of training courses scheduled for each month of the budget year, and has projected attendance for each month based on the average attendance achieved in previous years for those same months. Crazy Fred charges a course fee of $100 per attendee, which is input in cell **A8**. Crazy Fred also knows that the fixed cost of printing the training manual and having the food catered will be $22 and $27, respectively – as input into cells **A11** and **A12**.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Crazy Fred's Training**														
2															
3			**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
4		Number of Training Courses	10	20	25	10	-	10	10	30	30	25	20	20	
5		Projected Attendees Per Course	19.6	22.3	24.0	18.4	-	17.3	16.5	42.3	41.7	38.4	25.3	21.2	
6		Projected Total Attendees	196	446	600	184	-	173	165	1,269	1,251	960	506	424	6,174
7															
8	$ 100.00	Revenue	19,600	44,600	60,000	18,400	-	17,300	16,500	126,900	125,100	96,000	50,600	42,400	617,400
9															
10	**Vaiable Costs:**														
11	$ 22.00	Materials	4,312	9,812	13,200	4,048	-	3,806	3,630	27,918	27,522	21,120	11,132	9,328	
12	$ 27.00	Food	5,292	12,042	16,200	4,968	-	4,671	4,455	34,263	33,777	25,920	13,662	11,448	
13		Total Variable Costs	9,604	21,854	29,400	9,016	-	8,477	8,085	62,181	61,299	47,040	24,794	20,776	
14															
15	**Fixed Costs:**														
16		Meeting Room Lease	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	
17		Brochures & Marketing	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
18		Miscellaneous	500	500	500	500	500	500	500	500	500	500	500	500	
19			3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	
20															
21	**Profit or (Loss):**		6,746	19,496	27,350	6,134	(3,250)	5,573	5,165	61,469	60,551	45,710	22,556	18,374	
22															

Notice that this projection method does is not based on historical revenue amounts, only historical attendance figures have been used. In this example, the company knows how many classroom venues have been booked and has a fairly decent idea as to what attendance might be; therefore, regression based on historical revenue amounts would not be as accurate as using these known quantities to forecast revenues.

A more sophisticated example of forecasting revenues based on units of production is shown below. In this example, a CPA firm has listed each employee along with each employee's budgeted billable hours and billing rates by month.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	**CPA Firm Budget**															
2				15.0%	11.4%	12.4%	11.1%	5.1%	4.8%	4.2%	6.0%	6.1%	6.3%	8.3%	9.3%	100.0%
3	**Billable Hours**															
4	**Employee Name**	**Title**	**Annua**	**Jan-12**	**Feb-12**	**Mar-12**	**Apr-12**	**May-12**	**Jun-12**	**Jul-12**	**Aug-12**	**Sep-12**	**Oct-12**	**Nov-12**	**Dec-12**	
5	Jennifer W.	Partner	1,000	150.0	114.0	124.0	111.0	51.0	48.0	42.0	60.0	61.0	63.0	83.0	93.0	1,000.0
6	Lynne C.	Partner	1,000	150.0	114.0	124.0	111.0	51.0	48.0	42.0	60.0	61.0	63.0	83.0	93.0	1,000.0
7	Brenda J.	Manager	1,200	180.0	136.8	148.8	133.2	61.2	57.6	50.4	72.0	73.2	75.6	99.6	111.6	1,200.0
8	David S.	Manager	1,200	180.0	136.8	148.8	133.2	61.2	57.6	50.4	72.0	73.2	75.6	99.6	111.6	1,200.0
9	Billy T.	Supervisor	1,400	210.0	159.6	173.6	155.4	71.4	67.2	58.8	84.0	85.4	88.2	116.2	130.2	1,400.0
10	Craig R.	Supervisor	1,400	210.0	159.6	173.6	155.4	71.4	67.2	58.8	84.0	85.4	88.2	116.2	130.2	1,400.0
11	Sandra H.	Supervisor	1,400	210.0	159.6	173.6	155.4	71.4	67.2	58.8	84.0	85.4	88.2	116.2	130.2	1,400.0
12	Mary U.	Senior	1,650	247.5	188.1	204.6	183.2	84.2	79.2	69.3	99.0	100.7	104.0	137.0	153.5	1,650.0
13	Kris P.	Senior	1,650	247.5	188.1	204.6	183.2	84.2	79.2	69.3	99.0	100.7	104.0	137.0	153.5	1,650.0
14	Karen B.	Senior	1,650	247.5	188.1	204.6	183.2	84.2	79.2	69.3	99.0	100.7	104.0	137.0	153.5	1,650.0
15	Phillip L.	Senior	1,650	247.5	188.1	204.6	183.2	84.2	79.2	69.3	99.0	100.7	104.0	137.0	153.5	1,650.0
16	Nancy H.	Staff	1,800	270.0	205.2	223.2	199.8	91.8	86.4	75.6	108.0	109.8	113.4	149.4	167.4	1,800.0
17	Jerry M.	Staff	1,800	270.0	205.2	223.2	199.8	91.8	86.4	75.6	108.0	109.8	113.4	149.4	167.4	1,800.0
18	Benson G.	Staff	1,800	270.0	205.2	223.2	199.8	91.8	86.4	75.6	108.0	109.8	113.4	149.4	167.4	1,800.0
19	Gloria K.	Staff	1,800	270.0	205.2	223.2	199.8	91.8	86.4	75.6	108.0	109.8	113.4	149.4	167.4	1,800.0
20	Christine W.	Staff	1,800	270.0	205.2	223.2	199.8	91.8	86.4	75.6	108.0	109.8	113.4	149.4	167.4	1,800.0
21																
22	**Billing Rates**									10						
23	**Employee Name**	**Title**		**Jan-12**	**Feb-12**	**Mar-12**	**Apr-12**	**May-12**	**Jun-12**	**Jul-12**	**Aug-12**	**Sep-12**	**Oct-12**	**Nov-12**	**Dec-12**	
24	Jennifer W.	Partner		215	215	215	215	215	215	225	225	225	225	225	225	
25	Lynne C.	Partner		225	225	225	225	225	225	235	235	235	235	235	235	
26	Brenda J.	Manager		165	165	165	165	165	165	175	175	175	175	175	175	
27	David S.	Manager		175	175	175	175	175	175	185	185	185	185	185	185	
28	Billy T.	Supervisor		125	125	125	125	125	125	135	135	135	135	135	135	
29	Craig R.	Supervisor		115	115	115	115	115	115	125	125	125	125	125	125	
30	Sandra H.	Supervisor		115	115	115	115	115	115	125	125	125	125	125	125	
31	Mary U.	Senior		85	85	85	85	85	85	95	95	95	95	95	95	
32	Kris P.	Senior		85	85	85	85	85	85	95	95	95	95	95	95	
33	Karen B.	Senior		85	85	85	85	85	85	95	95	95	95	95	95	
34	Phillip L.	Senior		85	85	85	85	85	85	95	95	95	95	95	95	
35	Nancy H.	Staff		60	60	60	60	60	60	70	70	70	70	70	70	
36	Jerry M.	Staff		60	60	60	60	60	60	70	70	70	70	70	70	
37	Benson G.	Staff		60	60	60	60	60	60	70	70	70	70	70	70	
38	Gloria K.	Staff		60	60	60	60	60	60	70	70	70	70	70	70	
39	Christine W.	Staff		60	60	60	60	60	60	70	70	70	70	70	70	
40																
41	**Total Revenue:**															
42	**Employee Name**	**Title**		**Jan-12**	**Feb-12**	**Mar-12**	**Apr-12**	**May-12**	**Jun-12**	**Jul-12**	**Aug-12**	**Sep-12**	**Oct-12**	**Nov-12**	**Dec-12**	**Total**
43	Jennifer W.	Partner		32,250	24,510	26,660	23,865	10,965	10,320	9,450	13,500	13,725	14,175	18,675	20,925	219,020
44	Lynne C.	Partner		33,750	25,650	27,900	24,975	11,475	10,800	9,870	14,100	14,335	14,805	19,505	21,855	229,020
45	Brenda J.	Manager		29,700	22,572	24,552	21,978	10,098	9,504	8,820	12,600	12,810	13,230	17,430	19,530	202,824
46	David S.	Manager		31,500	23,940	26,040	23,310	10,710	10,080	9,324	13,320	13,542	13,986	18,426	20,646	214,824
47	Billy T.	Supervisor		26,250	19,950	21,700	19,425	8,925	8,400	7,938	11,340	11,529	11,907	15,687	17,577	180,628
48	Craig R.	Supervisor		24,150	18,354	19,964	17,871	8,211	7,728	7,350	10,500	10,675	11,025	14,525	16,275	166,628
49	Sandra H.	Supervisor		24,150	18,354	19,964	17,871	8,211	7,728	7,350	10,500	10,675	11,025	14,525	16,275	166,628
50	Mary U.	Senior		21,038	15,989	17,391	15,568	7,153	6,732	6,584	9,405	9,562	9,875	13,010	14,578	146,883
51	Kris P.	Senior		21,038	15,989	17,391	15,568	7,153	6,732	6,584	9,405	9,562	9,875	13,010	14,578	146,883
52	Karen B.	Senior		21,038	15,989	17,391	15,568	7,153	6,732	6,584	9,405	9,562	9,875	13,010	14,578	146,883
53	Phillip L.	Senior		21,038	15,989	17,391	15,568	7,153	6,732	6,584	9,405	9,562	9,875	13,010	14,578	146,883
54	Nancy H.	Staff		16,200	12,312	13,392	11,988	5,508	5,184	5,292	7,560	7,686	7,938	10,458	11,718	115,236
55	Jerry M.	Staff		16,200	12,312	13,392	11,988	5,508	5,184	5,292	7,560	7,686	7,938	10,458	11,718	115,236
56	Benson G.	Staff		16,200	12,312	13,392	11,988	5,508	5,184	5,292	7,560	7,686	7,938	10,458	11,718	115,236
57	Gloria K.	Staff		16,200	12,312	13,392	11,988	5,508	5,184	5,292	7,560	7,686	7,938	10,458	11,718	115,236
58	Christine W.	Staff		16,200	12,312	13,392	11,988	5,508	5,184	5,292	7,560	7,686	7,938	10,458	11,718	115,236
59				366,900	278,844	303,304	271,506	124,746	117,408	112,896	161,280	163,968	169,344	223,104	249,984	2,543,284
60																

In this example, projected revenue is again based upon units rather than historical revenue amounts, as regression methods applied to historical revenue amounts would likely yield less accurate projections.

Keep in mind that revenue is often more volatile than expenses. An effective marketing program might increase the number of units sold, a bad economy might adversely affect the number of units sold. Any foreseen or expected events like these should be incorporated into the budget and explained in detail.

In conclusion, while the regression example above was used to forecast both revenue and expenses, in many cases regression should probably only be used as a means of forecasting expenses only.

Calculating Your Desired Profit Margin

It is also useful for companies to budget and monitor their profit margins; a profit margin that misses its target speaks volumes. Once established, budget to actual profit margin comparisons can also be used as benchmarks to help detect fraud, errors or irregularities.

To calculate your desired profit margin, I suggest that you work backwards by asking yourself (or your client) two simple questions, as follows:

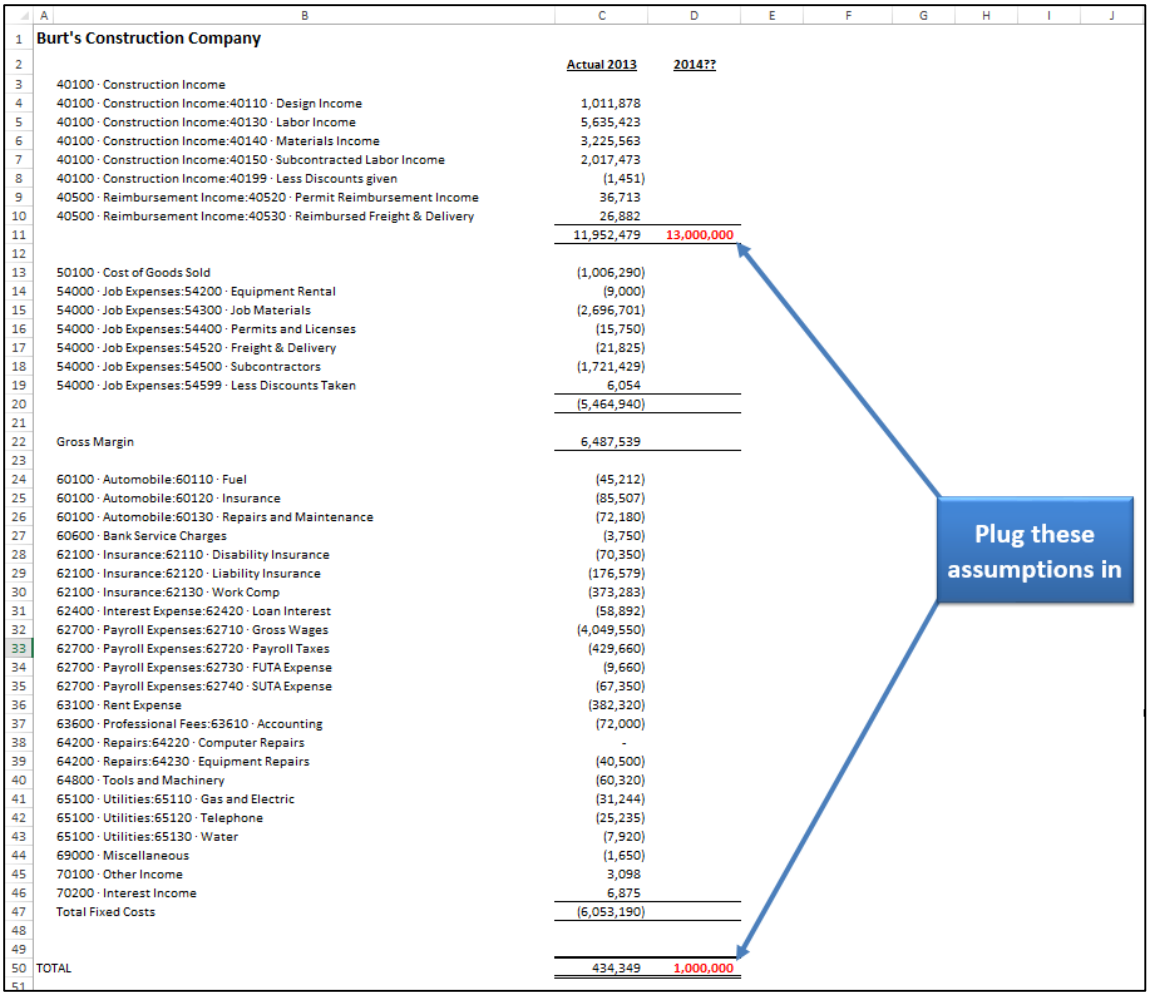
1. How much do you think revenue will be next year?
2. How much profit do you want to make?

For example:

Let's assume that Burt has owned and operated a construction company store for the past 17 years. As his CPA, I ask him two questions as follows: How much profit do you want to make next year and how much sales do you anticipate next year?

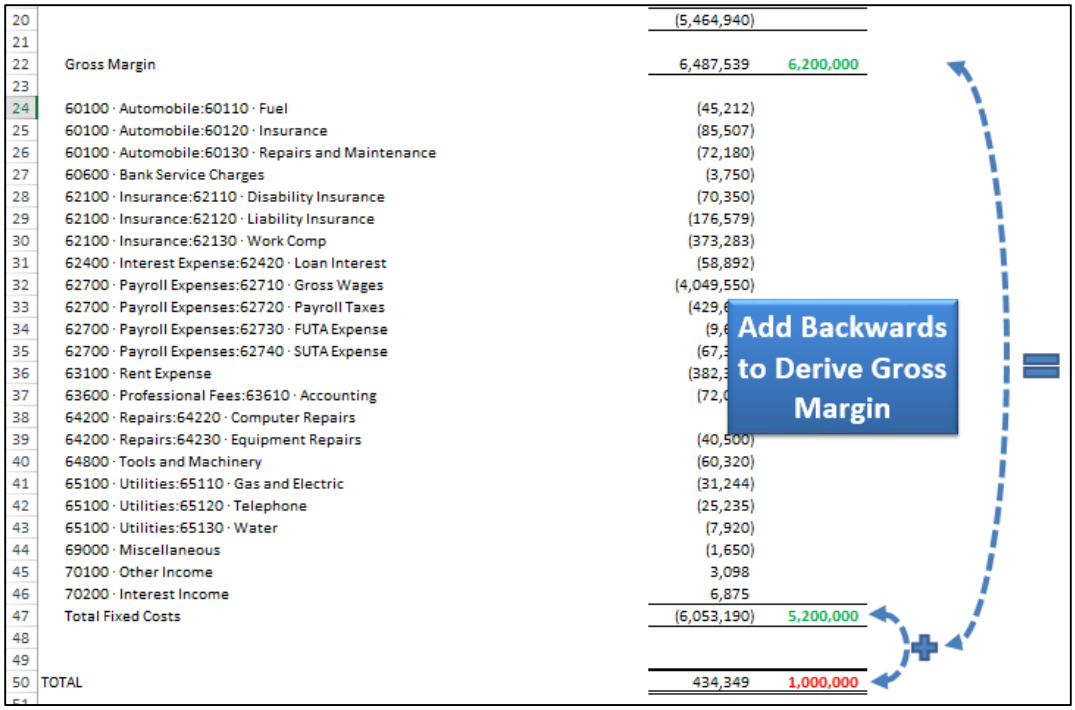
> *Burt responds – "that's easy, we've been growing at 8% a year for the past five years and last year (2013) we nearly reached $12 million sales, so we will probably hit $13 million in revenue next year (2014). Also, I'd like to make a million dollars profit – I think that's a reasonable goal."*

With just this little bit of data, we can work backwards based on Burt's prior year financial statements and advise him as follows:



		Actual 2013	2014??
1	**Burt's Construction Company**		
2			
3	40100 · Construction Income		
4	40100 · Construction Income:40110 · Design Income	1,011,878	
5	40100 · Construction Income:40130 · Labor Income	5,635,423	
6	40100 · Construction Income:40140 · Materials Income	3,225,563	
7	40100 · Construction Income:40150 · Subcontracted Labor Income	2,017,473	
8	40100 · Construction Income:40199 · Less Discounts given	(1,451)	
9	40500 · Reimbursement Income:40520 · Permit Reimbursement Income	36,713	
10	40500 · Reimbursement Income:40530 · Reimbursed Freight & Delivery	26,882	
11		11,952,479	13,000,000
12			
13	50100 · Cost of Goods Sold	(1,006,290)	
14	54000 · Job Expenses:54200 · Equipment Rental	(9,000)	
15	54000 · Job Expenses:54300 · Job Materials	(2,696,701)	
16	54000 · Job Expenses:54400 · Permits and Licenses	(15,750)	
17	54000 · Job Expenses:54520 · Freight & Delivery	(21,825)	
18	54000 · Job Expenses:54500 · Subcontractors	(1,721,429)	
19	54000 · Job Expenses:54599 · Less Discounts Taken	6,054	
20		(5,464,940)	
21			
22	Gross Margin	6,487,539	
23			
24	60100 · Automobile:60110 · Fuel	(45,212)	
25	60100 · Automobile:60120 · Insurance	(85,507)	
26	60100 · Automobile:60130 · Repairs and Maintenance	(72,180)	
27	60600 · Bank Service Charges	(3,750)	
28	62100 · Insurance:62110 · Disability Insurance	(70,350)	
29	62100 · Insurance:62120 · Liability Insurance	(176,579)	
30	62100 · Insurance:62130 · Work Comp	(373,283)	
31	62400 · Interest Expense:62420 · Loan Interest	(58,892)	
32	62700 · Payroll Expenses:62710 · Gross Wages	(4,049,550)	
33	62700 · Payroll Expenses:62720 · Payroll Taxes	(429,660)	
34	62700 · Payroll Expenses:62730 · FUTA Expense	(9,660)	
35	62700 · Payroll Expenses:62740 · SUTA Expense	(67,350)	
36	63100 · Rent Expense	(382,320)	
37	63600 · Professional Fees:63610 · Accounting	(72,000)	
38	64200 · Repairs:64220 · Computer Repairs	-	
39	64200 · Repairs:64230 · Equipment Repairs	(40,500)	
40	64800 · Tools and Machinery	(60,320)	
41	65100 · Utilities:65110 · Gas and Electric	(31,244)	
42	65100 · Utilities:65120 · Telephone	(25,235)	
43	65100 · Utilities:65130 · Water	(7,920)	
44	69000 · Miscellaneous	(1,650)	
45	70100 · Other Income	3,098	
46	70200 · Interest Income	6,875	
47	Total Fixed Costs	(6,053,190)	
48			
49			
50	TOTAL	434,349	1,000,000
51			

Burt's fixed costs are a little more than $6 million in 2012, but let's say that we can adjust this amount down to $5,200,000 because the company was able to renegotiate and sign a new lease agreement. The point is that we are using 2012's fixed cost amount along with any known adjustments. This allows us to work backwards to calculate the projected Gross Margin of $6,200,000.



20		(5,464,940)	
21			
22	Gross Margin	6,487,539	6,200,000
23			
24	60100 · Automobile:60110 · Fuel	(45,212)	
25	60100 · Automobile:60120 · Insurance	(85,507)	
26	60100 · Automobile:60130 · Repairs and Maintenance	(72,180)	
27	60600 · Bank Service Charges	(3,750)	
28	62100 · Insurance:62110 · Disability Insurance	(70,350)	
29	62100 · Insurance:62120 · Liability Insurance	(176,579)	
30	62100 · Insurance:62130 · Work Comp	(373,283)	
31	62400 · Interest Expense:62420 · Loan Interest	(58,892)	
32	62700 · Payroll Expenses:62710 · Gross Wages	(4,049,550)	
33	62700 · Payroll Expenses:62720 · Payroll Taxes	(429,6	
34	62700 · Payroll Expenses:62730 · FUTA Expense	(9,8	
35	62700 · Payroll Expenses:62740 · SUTA Expense	(67,3	
36	63100 · Rent Expense	(382,3	
37	63600 · Professional Fees:63610 · Accounting	(72,0	
38	64200 · Repairs:64220 · Computer Repairs		
39	64200 · Repairs:64230 · Equipment Repairs	(40,500)	
40	64800 · Tools and Machinery	(60,320)	
41	65100 · Utilities:65110 · Gas and Electric	(31,244)	
42	65100 · Utilities:65120 · Telephone	(25,235)	
43	65100 · Utilities:65130 · Water	(7,920)	
44	69000 · Miscellaneous	(1,650)	
45	70100 · Other Income	3,098	
46	70200 · Interest Income	6,875	
47	Total Fixed Costs	(6,053,190)	5,200,000
48			
49			
50	TOTAL	434,349	1,000,000

From here we can compute **Cost of Goods Sold**, and then divide **Cost of Goods Sold** and **Gross Margin** by **Sales** to derive the desired **Profit Margin** that will cover **Fixed Costs**, **Variable Costs** and still have the desired **Net Income** of $1,000,000 left over. In conclusion, a **Profit Margin** of 47.7%will yield the desired results.

	A	B	C	D	E	F
1	**Burt's Construction Company**					
2			**Actual 2013**	**2014??**		
3		40100 · Construction Income				
4		40100 · Construction Income:40110 · Design Income	1,011,878			
5		40100 · Construction Income:40130 · Labor Income	5,635,423			
6		40100 · Construction Income:40140 · Materials Income	3,225,563			
7		40100 · Construction Income:40150 · Subcontracted Labor Income	2,017,473			
8		40100 · Construction Income:40199 · Less Discounts given	(1,451)			
9		40500 · Reimbursement Income:40520 · Permit Reimbursement Income	36,713			
10		40500 · Reimbursement Income:40530 · Reimbursed Freight & Delivery	26,882			
11			11,952,479	13,000,000		100.0%
12						
13		50100 · Cost of Goods Sold	(1,006,290)			
14		54000 · Job Expenses:54200 · Equipment Rental	(9,000)			
15		54000 · Job Expenses:54300 · Job Materials	(2,696,701)			
16		54000 · Job Expenses:54400 · Permits and Licenses	(15,750)			
17		54000 · Job Expenses:54520 · Freight & Delivery	(21,825)			
18		54000 · Job Expenses:54500 · Subcontractors	(1,721,429)			
19		54000 · Job Expenses:54599 · Less Discounts Taken	6,054			
20			(5,464,940)	6,800,000		52.3%
21						
22		Gross Margin	6,487,539	6,200,000		47.7%
23						

Now that the optimum profit margin is known, let's say that further analysis reveals that the inventory and labor items on average are priced at just 44.5% above cost, as the following calculations show, net income for 2014 would only be expected to reach $585,000 – well below Burt's desired profit.

	A	B	C	D	E	F
1	**Burt's Construction Company**					
2			**Actual 2013**	**2014??**		
3		40100 · Construction Income				
4		40100 · Construction Income:40110 · Design Income	1,011,878			
5		40100 · Construction Income:40130 · Labor Income	5,635,423			
6		40100 · Construction Income:40140 · Materials Income	3,225,563			
7		40100 · Construction Income:40150 · Subcontracted Labor Income	2,017,473			
8		40100 · Construction Income:40199 · Less Discounts given	(1,451)			
9		40500 · Reimbursement Income:40520 · Permit Reimbursement Income	36,713			
10		40500 · Reimbursement Income:40530 · Reimbursed Freight & Delivery	26,882			
11			11,952,479	**13,000,000**		**100.0%**
12						
13		50100 · Cost of Goods Sold	(1,006,290)	(1,328,538)		
14		54000 · Job Expenses:54200 · Equipment Rental	(9,000)	(11,882)		
15		54000 · Job Expenses:54300 · Job Materials	(2,696,701)	(3,560,277)		
16		54000 · Job Expenses:54400 · Permits and Licenses	(15,750)	(20,794)		
17		54000 · Job Expenses:54520 · Freight & Delivery	(21,825)	(28,814)		
18		54000 · Job Expenses:54500 · Subcontractors	(1,721,429)	(2,272,688)		
19		54000 · Job Expenses:54599 · Less Discounts Taken	6,054	7,993		
20			(5,464,940)	**7,215,000**		**55.5%**
21						
22		Gross Margin	6,487,539	**5,785,000**		**44.5%**
23						
24		60100 · Automobile:60110 · Fuel	(45,212)			
25		60100 · Automobile:60120 · Insurance	(85,507)			
26		60100 · Automobile:60130 · Repairs and Maintenance	(72,180)			
27		60600 · Bank Service Charges	(3,750)			
28		62100 · Insurance:62110 · Disability Insurance	(70,350)			
29		62100 · Insurance:62120 · Liability Insurance	(176,579)			
30		62100 · Insurance:62130 · Work Comp	(373,283)			
31		62400 · Interest Expense:62420 · Loan Interest	(58,892)			
32		62700 · Payroll Expenses:62710 · Gross Wages	(4,049,550)			
33		62700 · Payroll Expenses:62720 · Payroll Taxes	(429,660)			
34		62700 · Payroll Expenses:62730 · FUTA Expense	(9,660)			
35		62700 · Payroll Expenses:62740 · SUTA Expense	(67,350)			
36		63100 · Rent Expense	(382,320)			
37		63600 · Professional Fees:63610 · Accounting	(72,000)			
38		64200 · Repairs:64220 · Computer Repairs	-			
39		64200 · Repairs:64230 · Equipment Repairs	(40,500)			
40		64800 · Tools and Machinery	(60,320)			
41		65100 · Utilities:65110 · Gas and Electric	(31,244)			
42		65100 · Utilities:65120 · Telephone	(25,235)			
43		65100 · Utilities:65130 · Water	(7,920)			
44		69000 · Miscellaneous	(1,650)			
45		70100 · Other Income	3,098			
46		70200 · Interest Income	6,875			
47		Total Fixed Costs	(6,053,190)	**5,200,000**		
48						
49						
50	TOTAL		434,349	**585,000**		
51						

At this point, you need to convince Burt of the importance of pricing his products and services at the desired profit margin in an effort to target the desired results. To convey this point, you will tell Burt the following laughable story about the Florida boys who started a business in Gainesville, Florida selling onions. It goes like this:

These two Florida boys were running up to Georgia and buying Vidalia onions at 4 for $1.00 which they then took back to Gainesville and sold for a quarter a piece on the

> streets. The business was an instant success and soon those boys found themselves selling from a road side stand, to a small store, to a much bigger store. The customers kept coming and the business kept getting bigger. Soon they had customers lined up around the block to buy those onions, which they kept buying 4 for a dollar and selling for 25 cents apiece.
>
> After six months, one Florida boy turned to the other and said – "you know, business is great! But I don't think we're making any money – what do you think we should do?" The other Florida boy thought real hard and then blurted – "I think we need a bigger truck."

OK, it's an old exaggerated story, but there is a lesson to be learned here. If you don't price your products to make a profit, you will never make a profit. And, ***if you don't price your products to make your desired profit, you will never make your desired profits***. In our example above, Burt should consider setting his margin pricing to target a profit margin of 47.7%, instead of the current profit margin of 44.5% to ensure a chance of achieving his desired goals. Without this measure, Burt has absolutely no chance of reaching his goals, unless his revenue estimate is wildly under-stated.

To be sure, if Burt's costs go up or down, his prices will need to be adjusted accordingly to provide the desired profit margin. But when you think about it, this approach is one in which Burt sells his goods and services to his customers at the lowest price point possible that covers his fixed costs, variable costs, and desired profit – and not a penny more. It seems reasonable that every company in the world strive for this goal - right?

Here's a simplified way to look at this - suppose your business was to purchase candy bars for resell. Your only options are to sell the candy bars for:

A. *Below cost.*
B. *At cost.*
C. *At cost plus your desired profit.*
D. *At cost plus an egregiously high profit.*
E. *At cost plus some random profit that may or may not be sufficient.*

I can't see how any reasonable person could select any option other then C – yet I see many companies sell their products based on all of these scenarios because they don't take time to calculate their desired profit margin, and then monitor that amount throughout the year.

You can download this Profit margin template at **www.CarltonCollins.com/profitmargin.xlxs**.

